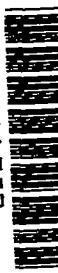


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TECHNICAL NOTE 3831

TABULATION OF MASS-FLOW PARAMETERS FOR USE IN DESIGN
OF TURBOMACHINE BLADE ROWS FOR RATIOS OF SPECIFIC
HEATS OF 1.3 AND 1.4

By Warren J. Whitney

Lewis Flight Propulsion Laboratory
Cleveland, Ohio



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TABULATION OF MASS-FLOW PARAMETERS FOR USE IN DESIGN OF TURBOMACHINE

BLADE ROWS FOR RATIOS OF SPECIFIC HEATS OF 1.3 AND 1.4

By Warren J. Whitney

SUMMARY

Mass-flow tables for ratios of specific heats γ of 1.3 and 1.4 are presented for the entire range of critical velocity ratio. The tables enable a quick and accurate determination of the integrated average specific mass flow across a region where the end-point velocities are known, commensurate with the assumptions that the total state is constant and the static pressure varies linearly between the two velocities. A numerical example is included to illustrate the use of the tables. All quantities are in nondimensional form and are tabulated against critical velocity ratio. The tables include specific-mass-flow parameter and ratio of static to total pressure.

INTRODUCTION

In a comprehensive turbine blading design procedure, the blade surface velocities are determined at two or three radial sections by a method such as that of reference 1. The blade surfaces and average velocity level are then adjusted until the blade passage satisfies the design mass-flow-handling requirement, and the blade surface velocity variations are reasonably close to the prescribed velocity variation. Thus, it is necessary to determine the integrated mass flow at various locations throughout the blade passage. The two assumptions that have frequently been used in turbine blading design procedure to determine the integrated mass flow are: (1) The total state of the fluid is constant along a potential line (or channel orthogonal), and (2) the static pressure varies linearly along the orthogonal between known (or computed) velocities. In order to facilitate mass-flow integrations commensurate with these assumptions, tables I and II were computed.

In addition to the quantity used to obtain average integrated mass-flow parameter, the point values of mass-flow parameter and static- to total-pressure ratio are tabulated against critical velocity ratio.

Although the specific-mass-flow parameter could be obtained from reference 2 as the product of the density ratio and the critical velocity ratio, the quantities in the reference are tabulated against Mach number, and it would be required to extrapolate in many cases for a desired critical velocity ratio.

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SYMBOLS

$$A \quad \text{value of integral} - \int_{\frac{p}{p'} = 1.0}^{\frac{p}{p'}} \left(\frac{\rho V}{\rho' V_{cr}} \right) d\left(\frac{p}{p'}\right)$$

p absolute static pressure, lb/sq ft

p' absolute total pressure, lb/sq ft

V gas velocity, ft/sec

V_{cr} velocity of sound at Mach number of 1.0, ft/sec

γ ratio of specific heats

ρ gas density based on static temperature and static pressure, lb/cu ft

ρ' gas density based on total temperature and total pressure, lb/cu ft

CONSTRUCTION OF TABLES

The density ratio and pressure ratio were expressed as functions of the critical velocity ratio as follows:

$$\frac{\rho}{\rho'} = \left[1 - \frac{\gamma - 1}{\gamma + 1} \left(\frac{V}{V_{cr}} \right)^2 \right]^{\frac{1}{\gamma-1}}$$

$$\frac{p}{p'} = \left[1 - \frac{\gamma - 1}{\gamma + 1} \left(\frac{V}{V_{cr}} \right)^2 \right]^{\frac{\gamma}{\gamma-1}}$$

The pressure ratio, density ratio, and specific-mass-flow parameter were evaluated over a range of critical velocity ratio from 0 to the maximum

value (given by $\left(\frac{r+1}{r-1}\right)^{1/2}$) for r of 1.3 and 1.4. The integral A was determined by a step-by-step trapezoidal integration between successive V/V_{cr} values that differed by 0.001. Each elemental area, dA , was combined with the previous total so that the A value represents the cumulative area for any particular critical velocity ratio.

The variation of specific-mass-flow parameter with static- to total-pressure ratio is shown in figure 1. Included in the figure for reference is an auxiliary abscissa of critical velocity ratio that is necessarily nonlinear, because a linear static-pressure variation was specified. This figure shows that the average integrated mass flow (commensurate with the assumptions used herein) between known critical velocity ratios of approximately 0.5 and 0.95 would be the area, bcde, divided by the abscissa be. However, the A values represent the cumulative area under the curve of $\rho V/\rho' V_{cr}$ as a function of the ratio of static to total pressure p/p' . Thus, the difference in A values for the two critical velocity ratios is equal to the area bcde. Although the quantity A can be integrated directly, it was convenient to use a point-by-point integration, since it was desired to obtain p/p' and $\rho V/\rho' V_{cr}$ for the various V/V_{cr} values. Furthermore, for a value of r for which $2/(r-1)$ does not equal a whole number, direct integration results in a power series, and a large number of terms must be used to obtain the desired accuracy.

USE OF TABLES

The tables can be used for a moving (or rotating) blade row as well as for a stationary blade row. In the case of a rotating blade row, the velocity V and the total-state quantities ρ' and V_{cr} must be evaluated relative to the moving blade row. The following numerical example is included to illustrate the use of the tables. A sketch of a typical turbine blade flow channel is shown in figure 2. It is assumed that the velocities have been determined for all the orthogonals at the two surfaces (e.g., points c and d, fig. 2) by the stream-filament method (ref. 1). It is desired to obtain the average integrated mass flow for the various orthogonals. Referring to figure 2, the following critical velocity ratios are assumed for the orthogonal cd:

Point c (suction surface): $V/V_{cr} = 0.996$

Point d (pressure surface): $V/V_{cr} = 0.558$

The integrated average mass flow is determined from table I ($r = 1.4$) as follows:

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CB-1 back

| Point | c | d |
|----------------------|----------|----------|
| V/V _{cr} | 0.996 | 0.558 |
| A (from table I) | .2332614 | .0577960 |
| (p/p')(from table I) | .5312402 | .8298491 |

The average integrated specific mass flow for the orthogonal cd is equal to $\left(\frac{\Delta A}{-\Delta \frac{p}{p'}} \right)_{c-d}$ or 0.5876094. The actual weight flow can then be obtained by multiplying by the total-state quantity, $\rho' V_{cr}$. Thus, the mass flow per unit depth would be $0.5876094 \times (\rho' V_{cr}) \times cd$.

Lewis Flight Propulsion Laboratory
 National Advisory Committee for Aeronautics
 Cleveland, Ohio, July 17, 1956

REFERENCES

1. Huppert, M. C., and MacGregor, Charles: Comparison Between Predicted and Observed Performance of Gas-Turbine Stator Blade Designed for Free-Vortex Flow. NACA TN 1810, 1949.
2. Ames Research Staff: Equations, Tables, and Charts for Compressible Flow. NACA Rep. 1135, 1953. (Supersedes NACA TN 1428.)

TABLE I. - MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.000 | 0.0000000 | 1.0000000 | 0.0000000 |
| .001 | .0010000 | .9999992 | .0000000 |
| .002 | .0020000 | .9999974 | .0000000 |
| .003 | .0030000 | .9999946 | .0000000 |
| .004 | .0040000 | .9999904 | .0000000 |
| .005 | .0049999 | .9999852 | .0000000 |
| .006 | .0059999 | .9999789 | .0000001 |
| .007 | .0069999 | .9999712 | .0000001 |
| .008 | .0079998 | .9999624 | .0000002 |
| .009 | .0089997 | .9999526 | .0000003 |
| .010 | .0099996 | .9999414 | .0000004 |
| .011 | .0109994 | .9999292 | .0000005 |
| .012 | .0119993 | .9999159 | .0000007 |
| .013 | .0129991 | .9999012 | .0000009 |
| .014 | .0139989 | .9998854 | .0000011 |
| .015 | .0149986 | .9998686 | .0000013 |
| .016 | .0159983 | .9998504 | .0000016 |
| .017 | .0169979 | .9998312 | .0000019 |
| .018 | .0179976 | .9998109 | .0000023 |
| .019 | .0189971 | .9997892 | .0000027 |
| .020 | .0199967 | .9997665 | .0000031 |
| .021 | .0209961 | .9997426 | .0000036 |
| .022 | .0219956 | .9997175 | .0000041 |
| .023 | .0229949 | .9996912 | .0000047 |
| .024 | .0239942 | .9996639 | .0000054 |
| .025 | .0249935 | .9996352 | .0000061 |
| .026 | .0259927 | .9996055 | .0000068 |
| .027 | .0269918 | .9995747 | .0000076 |
| .028 | .0279908 | .9995425 | .0000085 |
| .029 | .0289898 | .9995093 | .0000095 |
| .030 | .0299887 | .9994750 | .0000105 |
| .031 | .0309876 | .9994393 | .0000116 |
| .032 | .0319863 | .9994026 | .0000127 |
| .033 | .0329850 | .9993648 | .0000140 |
| .034 | .0339836 | .9993256 | .0000153 |
| .035 | .0349821 | .9992854 | .0000167 |
| .036 | .0359806 | .9992441 | .0000181 |
| .037 | .0369789 | .9992014 | .0000197 |
| .038 | .0379771 | .9991577 | .0000213 |
| .039 | .0389753 | .9991129 | .0000230 |
| .040 | .0399733 | .9990667 | .0000249 |
| .041 | .0409713 | .9990195 | .0000268 |
| .042 | .0419691 | .9989713 | .0000288 |
| .043 | .0429669 | .9989216 | .0000309 |
| .044 | .0439645 | .9988709 | .0000331 |
| .045 | .0449620 | .9988191 | .0000354 |
| .046 | .0459594 | .9987660 | .0000378 |
| .047 | .0469567 | .9987118 | .0000403 |
| .048 | .0479539 | .9986565 | .0000430 |
| .049 | .0489510 | .9985999 | .0000457 |
| .050 | .0499479 | .9985422 | .0000485 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|----------|----------|
| .051 | .0509447 | .9984835 | .0000515 |
| .052 | .0519414 | .9984233 | .0000546 |
| .053 | .0529380 | .9983621 | .0000578 |
| .054 | .0539344 | .9982999 | .0000611 |
| .055 | .0549307 | .9982363 | .0000646 |
| .056 | .0559268 | .9981716 | .0000682 |
| .057 | .0569229 | .9981059 | .0000719 |
| .058 | .0579187 | .9980388 | .0000757 |
| .059 | .0589145 | .9979707 | .0000797 |
| .060 | .0599100 | .9979015 | .0000838 |
| .061 | .0609055 | .9978309 | .0000881 |
| .062 | .0619007 | .9977592 | .0000925 |
| .063 | .0628959 | .9976855 | .0000970 |
| .064 | .0638908 | .9976125 | .0001017 |
| .065 | .0648856 | .9975374 | .0001066 |
| .066 | .0658803 | .9974612 | .0001115 |
| .067 | .0668747 | .9973836 | .0001167 |
| .068 | .0678690 | .9973050 | .0001220 |
| .069 | .0688632 | .9972254 | .0001274 |
| .070 | .0698572 | .9971443 | .0001331 |
| .071 | .0708510 | .9970623 | .0001388 |
| .072 | .0718446 | .9969792 | .0001448 |
| .073 | .0728380 | .9968946 | .0001509 |
| .074 | .0738313 | .9968091 | .0001572 |
| .075 | .0748243 | .9967225 | .0001636 |
| .076 | .0758172 | .9966345 | .0001702 |
| .077 | .0768099 | .9965455 | .0001770 |
| .078 | .0778024 | .9964554 | .0001840 |
| .079 | .0787947 | .9963639 | .0001911 |
| .080 | .0797868 | .9962714 | .0001985 |
| .081 | .0807787 | .9961779 | .0002060 |
| .082 | .0817704 | .9960829 | .0002137 |
| .083 | .0827619 | .9959869 | .0002216 |
| .084 | .0837532 | .9958899 | .0002297 |
| .085 | .0847443 | .9957915 | .0002380 |
| .086 | .0857352 | .9956921 | .0002464 |
| .087 | .0867259 | .9955916 | .0002551 |
| .088 | .0877163 | .9954897 | .0002640 |
| .089 | .0887065 | .9953868 | .0002731 |
| .090 | .0896965 | .9952829 | .0002823 |
| .091 | .0906863 | .9951775 | .0002918 |
| .092 | .0916759 | .9950711 | .0003015 |
| .093 | .0926652 | .9949637 | .0003114 |
| .094 | .0936543 | .9948549 | .0003216 |
| .095 | .0946431 | .9947451 | .0003319 |
| .096 | .0956318 | .9946342 | .0003425 |
| .097 | .0966201 | .9945219 | .0003533 |
| .098 | .0976083 | .9944086 | .0003643 |
| .099 | .0985962 | .9942943 | .0003755 |
| .100 | .0995838 | .9941786 | .0003869 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.101 | 0.1005712 | 0.9940618 | 0.0003986 |
| .102 | .1015584 | .9939440 | .0004105 |
| .103 | .1025453 | .9938249 | .0004227 |
| .104 | .1035319 | .9937046 | .0004351 |
| .105 | .1045183 | .9935834 | .0004477 |
| .106 | .1055044 | .9934608 | .0004606 |
| .107 | .1064903 | .9933371 | .0004737 |
| .108 | .1074759 | .9932124 | .0004870 |
| .109 | .1084612 | .9930863 | .0005006 |
| .110 | .1094462 | .9929592 | .0005145 |
| .111 | .1104310 | .9928311 | .0005286 |
| .112 | .1114155 | .9927015 | .0005429 |
| .113 | .1123997 | .9925710 | .0005575 |
| .114 | .1133837 | .9924394 | .0005724 |
| .115 | .1143673 | .9923064 | .0005875 |
| .116 | .1153507 | .9921724 | .0006029 |
| .117 | .1163338 | .9920374 | .0006186 |
| .118 | .1173166 | .9919010 | .0006345 |
| .119 | .1182991 | .9917635 | .0006507 |
| .120 | .1192813 | .9916251 | .0006672 |
| .121 | .1202632 | .9914852 | .0006839 |
| .122 | .1212448 | .9913443 | .0007009 |
| .123 | .1222261 | .9912024 | .0007182 |
| .124 | .1232071 | .9910591 | .0007358 |
| .125 | .1241878 | .9909148 | .0007536 |
| .126 | .1251682 | .9907695 | .0007717 |
| .127 | .1261482 | .9906228 | .0007902 |
| .128 | .1271280 | .9904750 | .0008089 |
| .129 | .1281074 | .9903262 | .0008279 |
| .130 | .1290865 | .9901761 | .0008472 |
| .131 | .1300653 | .9900249 | .0008668 |
| .132 | .1310438 | .9898727 | .0008866 |
| .133 | .1320219 | .9897192 | .0009068 |
| .134 | .1329997 | .9895646 | .0009273 |
| .135 | .1339772 | .9894089 | .0009481 |
| .136 | .1349543 | .9892519 | .0009692 |
| .137 | .1359311 | .9890939 | .0009906 |
| .138 | .1369076 | .9889349 | .0010123 |
| .139 | .1378837 | .9887745 | .0010344 |
| .140 | .1388594 | .9886131 | .0010567 |
| .141 | .1398349 | .9884506 | .0010793 |
| .142 | .1408099 | .9882868 | .0011023 |
| .143 | .1417847 | .9881219 | .0011256 |
| .144 | .1427591 | .9879560 | .0011492 |
| .145 | .1437331 | .9877888 | .0011732 |
| .146 | .1447067 | .9876206 | .0011974 |
| .147 | .1456800 | .9874513 | .0012220 |
| .148 | .1466529 | .9872806 | .0012470 |
| .149 | .1476255 | .9871090 | .0012722 |
| .150 | .1485977 | .9869363 | .0012978 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| .151 | 0.1495695 | 0.9867623 | 0.0013237 |
| .152 | .1505409 | .9865872 | .0013500 |
| .153 | .1515120 | .9864111 | .0013766 |
| .154 | .1524827 | .9862337 | .0014036 |
| .155 | .1534530 | .9860552 | .0014309 |
| .156 | .1544230 | .9858757 | .0014585 |
| .157 | .1553925 | .9856949 | .0014865 |
| .158 | .1563616 | .9855130 | .0015149 |
| .159 | .1573304 | .9853301 | .0015435 |
| .160 | .1582988 | .9851459 | .0015726 |
| .161 | .1592667 | .9849607 | .0016020 |
| .162 | .1602343 | .9847744 | .0016318 |
| .163 | .1612015 | .9845868 | .0016619 |
| .164 | .1621683 | .9843982 | .0016924 |
| .165 | .1631346 | .9842085 | .0017233 |
| .166 | .1641006 | .9840175 | .0017545 |
| .167 | .1650661 | .9838255 | .0017861 |
| .168 | .1660313 | .9836325 | .0018181 |
| .169 | .1669960 | .9834381 | .0018505 |
| .170 | .1679603 | .9832427 | .0018832 |
| .171 | .1689242 | .9830463 | .0019163 |
| .172 | .1698876 | .9828486 | .0019498 |
| .173 | .1708507 | .9826498 | .0019836 |
| .174 | .1718133 | .9824500 | .0020179 |
| .175 | .1727754 | .9822489 | .0020525 |
| .176 | .1737372 | .9820468 | .0020875 |
| .177 | .1746985 | .9818436 | .0021229 |
| .178 | .1756594 | .9816391 | .0021587 |
| .179 | .1766198 | .9814336 | .0021949 |
| .180 | .1775798 | .9812271 | .0022315 |
| .181 | .1785394 | .9810193 | .0022685 |
| .182 | .1794985 | .9808104 | .0023059 |
| .183 | .1804571 | .9806006 | .0023437 |
| .184 | .1814153 | .9803894 | .0023819 |
| .185 | .1823731 | .9801771 | .0024205 |
| .186 | .1833304 | .9799639 | .0024595 |
| .187 | .1842872 | .9797494 | .0024989 |
| .188 | .1852436 | .9795338 | .0025387 |
| .189 | .1861995 | .9793173 | .0025790 |
| .190 | .1871549 | .9790993 | .0026196 |
| .191 | .1881099 | .9788804 | .0026607 |
| .192 | .1890644 | .9786605 | .0027022 |
| .193 | .1900185 | .9784393 | .0027441 |
| .194 | .1909720 | .9782171 | .0027865 |
| .195 | .1919251 | .9779938 | .0028292 |
| .196 | .1928777 | .9777692 | .0028724 |
| .197 | .1938298 | .9775437 | .0029160 |
| .198 | .1947815 | .9773171 | .0029600 |
| .199 | .1957326 | .9770892 | .0030045 |
| .200 | .1966833 | .9768602 | .0030495 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| .201 | 0.1976335 | 0.9766303 | 0.0030948 |
| .202 | .1985831 | .9763991 | .0031406 |
| .203 | .1995323 | .9761669 | .0031868 |
| .204 | .2004810 | .9759336 | .0032335 |
| .205 | .2014292 | .9756991 | .0032806 |
| .206 | .2023768 | .9754635 | .0033282 |
| .207 | .2033240 | .9752270 | .0033762 |
| .208 | .2042707 | .9749891 | .0034246 |
| .209 | .2052168 | .9747502 | .0034735 |
| .210 | .2061625 | .9745104 | .0035229 |
| .211 | .2071076 | .9742692 | .0035727 |
| .212 | .2080522 | .9740270 | .0036230 |
| .213 | .2089963 | .9737838 | .0036737 |
| .214 | .2099398 | .9735394 | .0037249 |
| .215 | .2108829 | .9732939 | .0037766 |
| .216 | .2118254 | .9730474 | .0038286 |
| .217 | .2127674 | .9727996 | .0038813 |
| .218 | .2137088 | .9725508 | .0039343 |
| .219 | .2146497 | .9723011 | .0039878 |
| .220 | .2155901 | .9720500 | .0040418 |
| .221 | .2165299 | .9717979 | .0040963 |
| .222 | .2174693 | .9715449 | .0041512 |
| .223 | .2184080 | .9712905 | .0042066 |
| .224 | .2193462 | .9710351 | .0042625 |
| .225 | .2202839 | .9707788 | .0043189 |
| .226 | .2212210 | .9705211 | .0043757 |
| .227 | .22221575 | .9702625 | .0044331 |
| .228 | .2230935 | .9700029 | .0044909 |
| .229 | .2240290 | .9697420 | .0045492 |
| .230 | .2249639 | .9694800 | .0046080 |
| .231 | .2258982 | .9692172 | .0046673 |
| .232 | .2268319 | .9689529 | .0047271 |
| .233 | .2277651 | .9686878 | .0047874 |
| .234 | .2286978 | .9684216 | .0048481 |
| .235 | .2296298 | .9681541 | .0049094 |
| .236 | .2305613 | .9678857 | .0049712 |
| .237 | .2314922 | .9676163 | .0050334 |
| .238 | .2324225 | .9673455 | .0050962 |
| .239 | .2333522 | .9670738 | .0051595 |
| .240 | .2342814 | .9668012 | .0052232 |
| .241 | .2352099 | .9665272 | .0052875 |
| .242 | .2361379 | .9662522 | .0053523 |
| .243 | .2370653 | .9659763 | .0054176 |
| .244 | .2379921 | .9656991 | .0054835 |
| .245 | .2389183 | .9654209 | .0055498 |
| .246 | .2398439 | .9651417 | .0056166 |
| .247 | .2407689 | .9648612 | .0056840 |
| .248 | .2416933 | .9645798 | .0057519 |
| .249 | .2426171 | .9642974 | .0058203 |
| .250 | .2435403 | .9640137 | .0058893 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-------------|-------------|
| 0 . 251 | 0 . 24444629 | 0 . 9637290 | 0 . 0059587 |
| . 252 | . 2453849 | . 9634434 | . 0060287 |
| . 253 | . 2463062 | . 9631565 | . 0060992 |
| . 254 | . 2472270 | . 9628686 | . 0061703 |
| . 255 | . 2481471 | . 9625797 | . 0062418 |
| . 256 | . 2490666 | . 9622896 | . 0063140 |
| . 257 | . 2499855 | . 9619985 | . 0063866 |
| . 258 | . 2509038 | . 9617064 | . 0064598 |
| . 259 | . 2518214 | . 9614130 | . 0065335 |
| . 260 | . 2527384 | . 9611187 | . 0066077 |
| . 261 | . 2536548 | . 9608234 | . 0066825 |
| . 262 | . 2545705 | . 9605268 | . 0067579 |
| . 263 | . 2554856 | . 9602293 | . 0068338 |
| . 264 | . 2564001 | . 9599308 | . 0069102 |
| . 265 | . 2573139 | . 9596310 | . 0069872 |
| . 266 | . 2582271 | . 9593303 | . 0070647 |
| . 267 | . 2591396 | . 9590286 | . 0071427 |
| . 268 | . 2600515 | . 9587256 | . 0072214 |
| . 269 | . 2609627 | . 9584217 | . 0073005 |
| . 270 | . 2618733 | . 9581168 | . 0073802 |
| . 271 | . 2627832 | . 9578107 | . 0074606 |
| . 272 | . 2636925 | . 9575036 | . 0075414 |
| . 273 | . 2646011 | . 9571955 | . 0076228 |
| . 274 | . 2655090 | . 9568862 | . 0077048 |
| . 275 | . 2664163 | . 9565759 | . 0077873 |
| . 276 | . 2673230 | . 9562646 | . 0078703 |
| . 277 | . 2682289 | . 9559521 | . 0079540 |
| . 278 | . 2691342 | . 9556387 | . 0080383 |
| . 279 | . 2700388 | . 9553243 | . 0081230 |
| . 280 | . 2709427 | . 9550086 | . 0082084 |
| . 281 | . 2718460 | . 9546919 | . 0082943 |
| . 282 | . 2727486 | . 9543744 | . 0083808 |
| . 283 | . 2736505 | . 9540555 | . 0084679 |
| . 284 | . 2745517 | . 9537357 | . 0085556 |
| . 285 | . 2754522 | . 9534150 | . 0086438 |
| . 286 | . 2763520 | . 9530930 | . 0087326 |
| . 287 | . 2772512 | . 9527701 | . 0088220 |
| . 288 | . 2781497 | . 9524462 | . 0089119 |
| . 289 | . 2790474 | . 9521211 | . 0090025 |
| . 290 | . 2799444 | . 9517950 | . 0090937 |
| . 291 | . 2808408 | . 9514680 | . 0091853 |
| . 292 | . 2817365 | . 9511397 | . 0092777 |
| . 293 | . 2826314 | . 9508105 | . 0093706 |
| . 294 | . 2835257 | . 9504803 | . 0094640 |
| . 295 | . 2844192 | . 9501489 | . 0095582 |
| . 296 | . 2853120 | . 9498166 | . 0096528 |
| . 297 | . 2862042 | . 9494833 | . 0097481 |
| . 298 | . 2870956 | . 9491488 | . 0098440 |
| . 299 | . 2879862 | . 9488133 | . 0099404 |
| . 300 | . 2888762 | . 9484769 | . 0100374 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 0.301 | 0.2897654 | 0.9481393 | 0.0101351 |
| .302 | .2906540 | .9478007 | .0102334 |
| .303 | .2915418 | .9474612 | .0103322 |
| .304 | .2924288 | .9471204 | .0104317 |
| .305 | .2933151 | .9467787 | .0105318 |
| .306 | .2942008 | .9464361 | .0106324 |
| .307 | .2950856 | .9460923 | .0107338 |
| .308 | .2959697 | .9457475 | .0108356 |
| .309 | .2968531 | .9454018 | .0109381 |
| .310 | .2977357 | .9450548 | .0110413 |
| .311 | .2986176 | .9447070 | .0111450 |
| .312 | .2994988 | .9443582 | .0112493 |
| .313 | .3003792 | .9440081 | .0113543 |
| .314 | .3012589 | .9436572 | .0114599 |
| .315 | .3021378 | .9433053 | .0115660 |
| .316 | .3030159 | .9429522 | .0116729 |
| .317 | .3038933 | .9425982 | .0117803 |
| .318 | .3047699 | .9422432 | .0118883 |
| .319 | .3056458 | .9418870 | .0119970 |
| .320 | .3065209 | .9415299 | .0121063 |
| .321 | .3073952 | .9411719 | .0122162 |
| .322 | .3082688 | .9408127 | .0123268 |
| .323 | .3091416 | .9404525 | .0124380 |
| .324 | .3100136 | .9400915 | .0125498 |
| .325 | .3108849 | .9397292 | .0126622 |
| .326 | .3117553 | .9393660 | .0127753 |
| .327 | .3126251 | .9390018 | .0128890 |
| .328 | .3134939 | .9386365 | .0130034 |
| .329 | .3143621 | .9382702 | .0131183 |
| .330 | .3152294 | .9379031 | .0132339 |
| .331 | .3160960 | .9375347 | .0133502 |
| .332 | .3169617 | .9371654 | .0134671 |
| .333 | .3178267 | .9367952 | .0135846 |
| .334 | .3186909 | .9364238 | .0137028 |
| .335 | .3195543 | .9360515 | .0138216 |
| .336 | .3204169 | .9356783 | .0139410 |
| .337 | .3212786 | .9353039 | .0140612 |
| .338 | .3221396 | .9349286 | .0141819 |
| .339 | .3229998 | .9345523 | .0143033 |
| .340 | .3238592 | .9341749 | .0144253 |
| .341 | .3247177 | .9337966 | .0145480 |
| .342 | .3255755 | .9334173 | .0146713 |
| .343 | .3264324 | .9330369 | .0147954 |
| .344 | .3272885 | .9326555 | .0149200 |
| .345 | .3281439 | .9322733 | .0150453 |
| .346 | .3289983 | .9318899 | .0151713 |
| .347 | .3298520 | .9315055 | .0152979 |
| .348 | .3307048 | .9311203 | .0154251 |
| .349 | .3315568 | .9307339 | .0155531 |
| .350 | .3324080 | .9303466 | .0156816 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-------------------|-------------------|
| 0 . 3 5 1 | 0 . 3 3 3 2 5 8 4 | 0 . 9 2 9 9 5 8 4 | 0 . 0 1 5 8 1 0 8 |
| . 3 5 2 | . 3 3 4 1 0 7 8 | . 9 2 9 5 6 9 0 | . 0 1 5 9 4 0 8 |
| . 3 5 3 | . 3 3 4 9 5 6 5 | . 9 2 9 1 7 8 7 | . 0 1 6 0 7 1 3 |
| . 3 5 4 | . 3 3 5 8 0 4 4 | . 9 2 8 7 8 7 5 | . 0 1 6 2 0 2 5 |
| . 3 5 5 | . 3 3 6 6 5 1 4 | . 9 2 8 3 9 5 2 | . 0 1 6 3 3 4 5 |
| . 3 5 6 | . 3 3 7 4 9 7 5 | . 9 2 8 0 0 1 9 | . 0 1 6 4 6 7 0 |
| . 3 5 7 | . 3 3 8 3 4 2 9 | . 9 2 7 6 0 7 8 | . 0 1 6 6 0 0 2 |
| . 3 5 8 | . 3 3 9 1 8 7 3 | . 9 2 7 2 1 2 4 | . 0 1 6 7 3 4 1 |
| . 3 5 9 | . 3 4 0 0 3 1 0 | . 9 2 6 8 1 6 2 | . 0 1 6 8 6 8 7 |
| . 3 6 0 | . 3 4 0 8 7 3 8 | . 9 2 6 4 1 9 1 | . 0 1 7 0 0 3 9 |
| . 3 6 1 | . 3 4 1 7 1 5 7 | . 9 2 6 0 2 0 9 | . 0 1 7 1 3 9 8 |
| . 3 6 2 | . 3 4 2 5 5 6 7 | . 9 2 5 6 2 1 7 | . 0 1 7 2 7 6 4 |
| . 3 6 3 | . 3 4 3 3 9 7 0 | . 9 2 5 2 2 1 7 | . 0 1 7 4 1 3 6 |
| . 3 6 4 | . 3 4 4 2 3 6 3 | . 9 2 4 8 2 0 4 | . 0 1 7 5 5 1 5 |
| . 3 6 5 | . 3 4 5 0 7 4 8 | . 9 2 4 4 1 8 3 | . 0 1 7 6 9 0 1 |
| . 3 6 6 | . 3 4 5 9 1 2 5 | . 9 2 4 0 1 5 4 | . 0 1 7 8 2 9 3 |
| . 3 6 7 | . 3 4 6 7 4 9 2 | . 9 2 3 6 1 1 2 | . 0 1 7 9 6 9 3 |
| . 3 6 8 | . 3 4 7 5 8 5 1 | . 9 2 3 2 0 6 2 | . 0 1 8 1 0 9 9 |
| . 3 6 9 | . 3 4 8 4 2 0 2 | . 9 2 2 8 0 0 3 | . 0 1 8 2 5 1 2 |
| . 3 7 0 | . 3 4 9 2 5 4 3 | . 9 2 2 3 9 3 2 | . 0 1 8 3 9 3 2 |
| . 3 7 1 | . 3 5 0 0 8 7 6 | . 9 2 1 9 8 5 3 | . 0 1 8 5 3 5 8 |
| . 3 7 2 | . 3 5 0 9 2 0 1 | . 9 2 1 5 7 6 4 | . 0 1 8 6 7 9 1 |
| . 3 7 3 | . 3 5 1 7 5 1 6 | . 9 2 1 1 6 6 4 | . 0 1 8 8 2 3 2 |
| . 3 7 4 | . 3 5 2 5 8 2 2 | . 9 2 0 7 5 5 6 | . 0 1 8 9 6 7 8 |
| . 3 7 5 | . 3 5 3 4 1 2 0 | . 9 2 0 3 4 3 9 | . 0 1 9 1 1 3 2 |
| . 3 7 6 | . 3 5 4 2 4 0 9 | . 9 1 9 9 3 0 9 | . 0 1 9 2 5 9 3 |
| . 3 7 7 | . 3 5 5 0 6 8 9 | . 9 1 9 5 1 7 2 | . 0 1 9 4 0 6 0 |
| . 3 7 8 | . 3 5 5 8 9 6 1 | . 9 1 9 1 0 2 6 | . 0 1 9 5 5 3 4 |
| . 3 7 9 | . 3 5 6 7 2 2 3 | . 9 1 8 6 8 6 8 | . 0 1 9 7 0 1 6 |
| . 3 8 0 | . 3 5 7 5 4 7 6 | . 9 1 8 2 7 0 1 | . 0 1 9 8 5 0 4 |
| . 3 8 1 | . 3 5 8 3 7 2 1 | . 9 1 7 8 5 2 6 | . 0 1 9 9 9 9 8 |
| . 3 8 2 | . 3 5 9 1 9 5 6 | . 9 1 7 4 3 3 9 | . 0 2 0 1 5 0 0 |
| . 3 8 3 | . 3 6 0 0 1 8 3 | . 9 1 7 0 1 4 4 | . 0 2 0 3 0 0 9 |
| . 3 8 4 | . 3 6 0 8 4 0 1 | . 9 1 6 5 9 4 0 | . 0 2 0 4 5 2 4 |
| . 3 8 5 | . 3 6 1 6 6 0 9 | . 9 1 6 1 7 2 4 | . 0 2 0 6 0 4 7 |
| . 3 8 6 | . 3 6 2 4 8 0 9 | . 9 1 5 7 5 0 0 | . 0 2 0 7 5 7 7 |
| . 3 8 7 | . 3 6 3 3 0 0 0 | . 9 1 5 3 2 6 7 | . 0 2 0 9 1 1 3 |
| . 3 8 8 | . 3 6 4 1 1 8 1 | . 9 1 4 9 0 2 3 | . 0 2 1 0 6 5 6 |
| . 3 8 9 | . 3 6 4 9 3 5 3 | . 9 1 4 4 7 7 0 | . 0 2 1 2 2 0 7 |
| . 3 9 0 | . 3 6 5 7 5 1 6 | . 9 1 4 0 5 0 9 | . 0 2 1 3 7 6 4 |
| . 3 9 1 | . 3 6 6 5 6 7 0 | . 9 1 3 6 2 3 6 | . 0 2 1 5 3 2 8 |
| . 3 9 2 | . 3 6 7 3 8 1 5 | . 9 1 3 1 9 5 4 | . 0 2 1 6 8 9 9 |
| . 3 9 3 | . 3 6 8 1 9 5 1 | . 9 1 2 7 6 6 5 | . 0 2 1 8 4 7 7 |
| . 3 9 4 | . 3 6 9 0 0 7 7 | . 9 1 2 3 3 6 3 | . 0 2 2 0 0 6 2 |
| . 3 9 5 | . 3 6 9 8 1 9 5 | . 9 1 1 9 0 5 3 | . 0 2 2 1 6 5 5 |
| . 3 9 6 | . 3 7 0 6 3 0 3 | . 9 1 1 4 7 3 5 | . 0 2 2 3 2 5 3 |
| . 3 9 7 | . 3 7 1 4 4 0 2 | . 9 1 1 0 4 0 5 | . 0 2 2 4 8 6 0 |
| . 3 9 8 | . 3 7 2 2 4 9 1 | . 9 1 0 6 0 6 7 | . 0 2 2 6 4 7 3 |
| . 3 9 9 | . 3 7 3 0 5 7 2 | . 9 1 0 1 7 2 1 | . 0 2 2 8 0 9 3 |
| . 4 0 0 | . 3 7 3 8 6 4 2 | . 9 0 9 7 3 6 3 | . 0 2 2 9 7 2 0 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | ρ/ρ' | A |
|------------|-----------------------|--------------|-----------|
| .401 | 0.3746704 | 0.9092996 | 0.0231355 |
| .402 | .3754756 | .9083621 | .0232995 |
| .403 | .3762799 | .9084235 | .0234644 |
| .404 | .3770832 | .9079840 | .0236299 |
| .405 | .3778857 | .9075438 | .0237961 |
| .406 | .3786871 | .9071023 | .0239631 |
| .407 | .3794876 | .9066600 | .0241308 |
| .408 | .3802872 | .9062169 | .0242991 |
| .409 | .3810858 | .9057727 | .0244682 |
| .410 | .3818835 | .9053276 | .0246380 |
| .411 | .3826802 | .9048818 | .0248085 |
| .412 | .3834759 | .9044347 | .0249797 |
| .413 | .3842707 | .9039869 | .0251516 |
| .414 | .3850646 | .9035382 | .0253242 |
| .415 | .3858574 | .9030884 | .0254976 |
| .416 | .3866493 | .9026378 | .0256717 |
| .417 | .3874403 | .9021863 | .0258464 |
| .418 | .3882302 | .9017337 | .0260219 |
| .419 | .3890192 | .9012803 | .0261981 |
| .420 | .3898073 | .9008261 | .0263750 |
| .421 | .3905943 | .9003708 | .0265527 |
| .422 | .3913804 | .8999146 | .0267310 |
| .423 | .3921656 | .8994577 | .0269101 |
| .424 | .3929497 | .8989996 | .0270899 |
| .425 | .3937328 | .8985407 | .0272704 |
| .426 | .3945150 | .8980810 | .0274516 |
| .427 | .3952961 | .8976201 | .0276336 |
| .428 | .3960763 | .8971585 | .0278162 |
| .429 | .3968556 | .8966961 | .0279996 |
| .430 | .3976337 | .8962325 | .0281837 |
| .431 | .3984110 | .8957682 | .0283685 |
| .432 | .3991872 | .8953030 | .0285540 |
| .433 | .3999624 | .8948367 | .0287403 |
| .434 | .4007366 | .8943695 | .0289275 |
| .435 | .4015099 | .8939018 | .0291150 |
| .436 | .4022821 | .8934328 | .0293035 |
| .437 | .4030533 | .8929630 | .0294927 |
| .438 | .4038235 | .8924924 | .0296825 |
| .439 | .4045927 | .8920208 | .0298732 |
| .440 | .4053609 | .8915483 | .0300645 |
| .441 | .4061281 | .8910750 | .0302565 |
| .442 | .4068943 | .8906007 | .0304494 |
| .443 | .4076594 | .8901255 | .0306429 |
| .444 | .4084236 | .8896496 | .0308371 |
| .445 | .4091866 | .8891725 | .0310321 |
| .446 | .4099487 | .8886947 | .0312278 |
| .447 | .4107098 | .8882161 | .0314242 |
| .448 | .4114698 | .8877364 | .0316214 |
| .449 | .4122289 | .8872559 | .0318193 |
| .450 | .4129869 | .8867746 | .0320179 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .451 | 0.4137438 | 0.8862922 | 0.0322173 |
| .452 | .4144997 | .8858091 | .0324173 |
| .453 | .4152546 | .8853252 | .0326181 |
| .454 | .4160085 | .8848402 | .0328197 |
| .455 | .4167613 | .8843544 | .0330220 |
| .456 | .4175131 | .8838678 | .0332249 |
| .457 | .4182638 | .8833802 | .0334287 |
| .458 | .4190134 | .8828918 | .0336332 |
| .459 | .4197621 | .8824026 | .0338383 |
| .460 | .4205097 | .8819123 | .0340443 |
| .461 | .4212562 | .8814213 | .0342510 |
| .462 | .4220017 | .8809295 | .0344583 |
| .463 | .4227461 | .8804366 | .0346665 |
| .464 | .4234895 | .8799430 | .0348754 |
| .465 | .4242319 | .8794486 | .0350849 |
| .466 | .4249731 | .8789531 | .0352953 |
| .467 | .4257133 | .8784569 | .0355064 |
| .468 | .4264525 | .8779599 | .0357181 |
| .469 | .4271905 | .8774618 | .0359307 |
| .470 | .4279275 | .8769630 | .0361440 |
| .471 | .4286635 | .8764634 | .0363580 |
| .472 | .4293983 | .8759628 | .0365728 |
| .473 | .4301321 | .8754614 | .0367882 |
| .474 | .4308649 | .8749593 | .0370044 |
| .475 | .4315965 | .8744561 | .0372214 |
| .476 | .4323270 | .8739521 | .0374391 |
| .477 | .4330566 | .8734474 | .0376575 |
| .478 | .4337849 | .8729416 | .0378767 |
| .479 | .4345123 | .8724351 | .0380966 |
| .480 | .4352386 | .8719279 | .0383172 |
| .481 | .4359637 | .8714196 | .0385386 |
| .482 | .4366877 | .8709105 | .0387607 |
| .483 | .4374107 | .8704007 | .0389835 |
| .484 | .4381326 | .8698899 | .0392071 |
| .485 | .4388534 | .8693783 | .0394315 |
| .486 | .4395731 | .8688660 | .0396565 |
| .487 | .4402917 | .8683527 | .0398823 |
| .488 | .4410092 | .8678386 | .0401089 |
| .489 | .4417256 | .8673237 | .0403361 |
| .490 | .4424409 | .8668079 | .0405641 |
| .491 | .4431551 | .8662913 | .0407929 |
| .492 | .4438682 | .8657740 | .0410223 |
| .493 | .4445801 | .8652556 | .0412526 |
| .494 | .4452910 | .8647365 | .0414835 |
| .495 | .4460008 | .8642167 | .0417152 |
| .496 | .4467094 | .8636958 | .0419477 |
| .497 | .4474170 | .8631743 | .0421809 |
| .498 | .4481234 | .8626520 | .0424147 |
| .499 | .4488287 | .8621286 | .0426494 |
| .500 | .4495329 | .8616046 | .0428848 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .501 | 0.4502359 | 0.8610798 | 0.0431209 |
| .502 | .4509378 | .8605540 | .0433578 |
| .503 | .4516386 | .8600275 | .0435954 |
| .504 | .4523384 | .8595003 | .0438337 |
| .505 | .4530369 | .8589721 | .0440728 |
| .506 | .4537343 | .8584431 | .0443127 |
| .507 | .4544306 | .8579135 | .0445532 |
| .508 | .4551257 | .8573828 | .0447945 |
| .509 | .4558198 | .8568514 | .0450365 |
| .510 | .4565127 | .8563193 | .0452793 |
| .511 | .4572044 | .8557862 | .0455228 |
| .512 | .4578950 | .8552524 | .0457671 |
| .513 | .4585845 | .8547179 | .0460120 |
| .514 | .4592728 | .8541824 | .0462578 |
| .515 | .4599599 | .8536462 | .0465042 |
| .516 | .4606460 | .8531092 | .0467514 |
| .517 | .4613308 | .8525713 | .0469993 |
| .518 | .4620146 | .8520327 | .0472480 |
| .519 | .4626972 | .8514934 | .0474974 |
| .520 | .4633785 | .8509531 | .0477475 |
| .521 | .4640588 | .8504121 | .0479984 |
| .522 | .4647379 | .8498704 | .0482500 |
| .523 | .4654159 | .8493277 | .0485024 |
| .524 | .4660926 | .8487843 | .0487555 |
| .525 | .4667683 | .8482402 | .0490092 |
| .526 | .4674427 | .8476952 | .0492638 |
| .527 | .4681160 | .8471494 | .0495191 |
| .528 | .4687882 | .8466030 | .0497751 |
| .529 | .4694591 | .8460556 | .0500319 |
| .530 | .4701289 | .8455075 | .0502894 |
| .531 | .4707975 | .8449587 | .0505476 |
| .532 | .4714649 | .8444090 | .0508066 |
| .533 | .4721312 | .8438586 | .0510663 |
| .534 | .4727963 | .8433075 | .0513266 |
| .535 | .4734602 | .8427554 | .0515878 |
| .536 | .4741229 | .8422026 | .0518497 |
| .537 | .4747845 | .8416492 | .0521123 |
| .538 | .4754448 | .8410948 | .0523757 |
| .539 | .4761039 | .8405397 | .0526398 |
| .540 | .4767620 | .8399840 | .0529046 |
| .541 | .4774187 | .8394273 | .0531702 |
| .542 | .4780743 | .8388699 | .0534365 |
| .543 | .4787288 | .8383119 | .0537034 |
| .544 | .4793820 | .8377529 | .0539712 |
| .545 | .4800340 | .8371932 | .0542397 |
| .546 | .4806849 | .8366329 | .0545088 |
| .547 | .4813344 | .8360716 | .0547788 |
| .548 | .4819829 | .8355097 | .0550495 |
| .549 | .4826301 | .8349471 | .0553208 |
| .550 | .4832761 | .8343835 | .0555930 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| .551 | 0.4839210 | 0.8338193 | 0.0558658 |
| .552 | .4845646 | .8332545 | .0561393 |
| .553 | .4852070 | .8326887 | .0564137 |
| .554 | .4858482 | .8321222 | .0566887 |
| .555 | .4864882 | .8315551 | .0569644 |
| .556 | .4871269 | .8309871 | .0572410 |
| .557 | .4877645 | .8304184 | .0575182 |
| .558 | .4884009 | .8298491 | .0577960 |
| .559 | .4890359 | .8292788 | .0580748 |
| .560 | .4896699 | .8287079 | .0583541 |
| .561 | .4903026 | .8281364 | .0586342 |
| .562 | .4909340 | .8275639 | .0589150 |
| .563 | .4915642 | .8269907 | .0591966 |
| .564 | .4921933 | .8264170 | .0594788 |
| .565 | .4928210 | .8258423 | .0597619 |
| .566 | .4934476 | .8252670 | .0600456 |
| .567 | .4940730 | .8246910 | .0603300 |
| .568 | .4946970 | .8241141 | .0606152 |
| .569 | .4953199 | .8235366 | .0609010 |
| .570 | .4959416 | .8229585 | .0611876 |
| .571 | .4965619 | .8223794 | .0614749 |
| .572 | .4971811 | .8217997 | .0617630 |
| .573 | .4977990 | .8212194 | .0620516 |
| .574 | .4984157 | .8206382 | .0623412 |
| .575 | .4990311 | .8200564 | .0626313 |
| .576 | .4996454 | .8194739 | .0629222 |
| .577 | .5002583 | .8188905 | .0632139 |
| .578 | .5008700 | .8183065 | .0635062 |
| .579 | .5014805 | .8177219 | .0637992 |
| .580 | .5020896 | .8171364 | .0640930 |
| .581 | .5026976 | .8165503 | .0643874 |
| .582 | .5033043 | .8159636 | .0646826 |
| .583 | .5039097 | .8153759 | .0649785 |
| .584 | .5045139 | .8147877 | .0652751 |
| .585 | .5051169 | .8141988 | .0655724 |
| .586 | .5057185 | .8136091 | .0658704 |
| .587 | .5063190 | .8130187 | .0661692 |
| .588 | .5069182 | .8124277 | .0664686 |
| .589 | .5075160 | .8118359 | .0667687 |
| .590 | .5081127 | .8112434 | .0670696 |
| .591 | .5087081 | .8106504 | .0673711 |
| .592 | .5093021 | .8100565 | .0676734 |
| .593 | .5098950 | .8094619 | .0679764 |
| .594 | .5104866 | .8088668 | .0682800 |
| .595 | .5110768 | .8082708 | .0685845 |
| .596 | .5116658 | .8076742 | .0688895 |
| .597 | .5122536 | .8070770 | .0691953 |
| .598 | .5128400 | .8064789 | .0695018 |
| .599 | .5134252 | .8058803 | .0698090 |
| .600 | .5140092 | .8052810 | .0701169 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|----------|----------|
| .601 | .5145918 | .8046809 | .0704255 |
| .602 | .5151731 | .8040802 | .0707348 |
| .603 | .5157532 | .8034790 | .0710447 |
| .604 | .5163320 | .8028768 | .0713555 |
| .605 | .5169095 | .8022741 | .0716668 |
| .606 | .5174857 | .8016708 | .0719789 |
| .607 | .5180606 | .8010666 | .0722917 |
| .608 | .5186342 | .8004619 | .0726051 |
| .609 | .5192066 | .7998566 | .0729192 |
| .610 | .5197776 | .7992504 | .0732342 |
| .611 | .5203474 | .7986437 | .0735497 |
| .612 | .5209159 | .7980364 | .0738659 |
| .613 | .5214830 | .7974282 | .0741828 |
| .614 | .5220489 | .7968195 | .0745005 |
| .615 | .5226135 | .7962102 | .0748187 |
| .616 | .5231767 | .7956000 | .0751378 |
| .617 | .5237387 | .7949893 | .0754574 |
| .618 | .5242994 | .7943781 | .0757777 |
| .619 | .5248587 | .7937660 | .0760988 |
| .620 | .5254168 | .7931533 | .0764206 |
| .621 | .5259736 | .7925401 | .0767429 |
| .622 | .5265290 | .7919260 | .0770661 |
| .623 | .5270831 | .7913114 | .0773899 |
| .624 | .5276359 | .7906963 | .0777143 |
| .625 | .5281874 | .7900803 | .0780395 |
| .626 | .5287376 | .7894637 | .0783653 |
| .627 | .5292865 | .7888467 | .0786917 |
| .628 | .5298340 | .7882287 | .0790190 |
| .629 | .5303802 | .7876103 | .0793468 |
| .630 | .5309252 | .7869913 | .0796753 |
| .631 | .5314688 | .7863714 | .0800045 |
| .632 | .5320110 | .7857511 | .0803344 |
| .633 | .5325520 | .7851302 | .0806649 |
| .634 | .5330916 | .7845085 | .0809962 |
| .635 | .5336299 | .7838862 | .0813280 |
| .636 | .5341669 | .7832634 | .0816605 |
| .637 | .5347025 | .7826398 | .0819938 |
| .638 | .5352369 | .7820157 | .0823277 |
| .639 | .5357699 | .7813910 | .0826622 |
| .640 | .5363015 | .7807656 | .0829975 |
| .641 | .5368318 | .7801396 | .0833334 |
| .642 | .5373608 | .7795131 | .0836699 |
| .643 | .5378885 | .7788857 | .0840071 |
| .644 | .5384148 | .7782579 | .0843450 |
| .645 | .5389398 | .7776295 | .0846835 |
| .646 | .5394634 | .7770004 | .0850228 |
| .647 | .5399857 | .7763707 | .0853626 |
| .648 | .5405067 | .7757405 | .0857031 |
| .649 | .5410262 | .7751095 | .0860443 |
| .650 | .5415445 | .7744780 | .0863861 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho^* V_{cr}$ | p/p^* | A |
|------------|--------------------------|-----------|-----------|
| .651 | 0.5420614 | 0.7738460 | 0.0867285 |
| .652 | .5425770 | .7732132 | .0870717 |
| .653 | .5430912 | .7725799 | .0874155 |
| .654 | .5436041 | .7719461 | .0877599 |
| .655 | .5441156 | .7713115 | .0881050 |
| .656 | .5446257 | .7706764 | .0884507 |
| .657 | .5451346 | .7700408 | .0887971 |
| .658 | .5456420 | .7694044 | .0891441 |
| .659 | .5461481 | .7687675 | .0894918 |
| .660 | .5466529 | .7681302 | .0898400 |
| .661 | .5471562 | .7674920 | .0901891 |
| .662 | .5476583 | .7668534 | .0905387 |
| .663 | .5481590 | .7662142 | .0908888 |
| .664 | .5486582 | .7655743 | .0912398 |
| .665 | .5491562 | .7649339 | .0915913 |
| .666 | .5496528 | .7642931 | .0919434 |
| .667 | .5501480 | .7636514 | .0922962 |
| .668 | .5506418 | .7630093 | .0926497 |
| .669 | .5511343 | .7623667 | .0930037 |
| .670 | .5516254 | .7617233 | .0933584 |
| .671 | .5521152 | .7610795 | .0937137 |
| .672 | .5526036 | .7604351 | .0940696 |
| .673 | .5530905 | .7597900 | .0944263 |
| .674 | .5535761 | .7591445 | .0947835 |
| .675 | .5540604 | .7584985 | .0951412 |
| .676 | .5545432 | .7578517 | .0954998 |
| .677 | .5550247 | .7572044 | .0958588 |
| .678 | .5555049 | .7565567 | .0962185 |
| .679 | .5559836 | .7559083 | .0965789 |
| .680 | .5564610 | .7552593 | .0969398 |
| .681 | .5569370 | .7546099 | .0973013 |
| .682 | .5574115 | .7539598 | .0976636 |
| .683 | .5578847 | .7533092 | .0980264 |
| .684 | .5583566 | .7526582 | .0983897 |
| .685 | .5588270 | .7520064 | .0987538 |
| .686 | .5592960 | .7513541 | .0991185 |
| .687 | .5597638 | .7507015 | .0994837 |
| .688 | .5602300 | .7500480 | .0998496 |
| .689 | .5606949 | .7493942 | .1002160 |
| .690 | .5611584 | .7487398 | .1005831 |
| .691 | .5616205 | .7480848 | .1009508 |
| .692 | .5620812 | .7474293 | .1013191 |
| .693 | .5625405 | .7467734 | .1016879 |
| .694 | .5629984 | .7461167 | .1020575 |
| .695 | .5634549 | .7454596 | .1024276 |
| .696 | .5639101 | .7448021 | .1027982 |
| .697 | .5643638 | .7441438 | .1031696 |
| .698 | .5648161 | .7434851 | .1035414 |
| .699 | .5652671 | .7428260 | .1039139 |
| .700 | .5657165 | .7421662 | .1042870 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .701 | 0.5661647 | 0.7415059 | 0.1046607 |
| .702 | .5666114 | .7408452 | .1050349 |
| .703 | .5670567 | .7401838 | .1054098 |
| .704 | .5675006 | .7395220 | .1057852 |
| .705 | .5679431 | .7388597 | .1061612 |
| .706 | .5683841 | .7381968 | .1065379 |
| .707 | .5688238 | .7375334 | .1069151 |
| .708 | .5692621 | .7368696 | .1072928 |
| .709 | .5696989 | .7362052 | .1076712 |
| .710 | .5701344 | .7355402 | .1080501 |
| .711 | .5705685 | .7348749 | .1084296 |
| .712 | .5710010 | .7342089 | .1088097 |
| .713 | .5714322 | .7335425 | .1091904 |
| .714 | .5718621 | .7328757 | .1095716 |
| .715 | .5722904 | .7322082 | .1099535 |
| .716 | .5727173 | .7315402 | .1103359 |
| .717 | .5731429 | .7308719 | .1107188 |
| .718 | .5735670 | .7302029 | .1111024 |
| .719 | .5739896 | .7295335 | .1114864 |
| .720 | .5744110 | .7288637 | .1118711 |
| .721 | .5748308 | .7281932 | .1122563 |
| .722 | .5752492 | .7275223 | .1126421 |
| .723 | .5756662 | .7268511 | .1130284 |
| .724 | .5760817 | .7261791 | .1134154 |
| .725 | .5764959 | .7255068 | .1138028 |
| .726 | .5769086 | .7248340 | .1141908 |
| .727 | .5773199 | .7241607 | .1145794 |
| .728 | .5777297 | .7234869 | .1149685 |
| .729 | .5781382 | .7228127 | .1153581 |
| .730 | .5785451 | .7221379 | .1157484 |
| .731 | .5789507 | .7214627 | .1161392 |
| .732 | .5793549 | .7207871 | .1165305 |
| .733 | .5797575 | .7201108 | .1169224 |
| .734 | .5801588 | .7194342 | .1173148 |
| .735 | .5805586 | .7187572 | .1177077 |
| .736 | .5809569 | .7180796 | .1181012 |
| .737 | .5813539 | .7174016 | .1184953 |
| .738 | .5817494 | .7167232 | .1188898 |
| .739 | .5821434 | .7160442 | .1192849 |
| .740 | .5825361 | .7153648 | .1196806 |
| .741 | .5829273 | .7146850 | .1200767 |
| .742 | .5833170 | .7140046 | .1204735 |
| .743 | .5837053 | .7133238 | .1208707 |
| .744 | .5840922 | .7126427 | .1212684 |
| .745 | .5844776 | .7119610 | .1216667 |
| .746 | .5848615 | .7112788 | .1220656 |
| .747 | .5852441 | .7105964 | .1224648 |
| .748 | .5856251 | .7099133 | .1228647 |
| .749 | .5860047 | .7092298 | .1232651 |
| .750 | .5863829 | .7085460 | .1236660 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .751 | 0.5867596 | 0.7078616 | 0.1240674 |
| .752 | .5871348 | .7071768 | .1244693 |
| .753 | .5875087 | .7064917 | .1248717 |
| .754 | .5878810 | .7058060 | .1252747 |
| .755 | .5882519 | .7051199 | .1256782 |
| .756 | .5886214 | .7044335 | .1260821 |
| .757 | .5889894 | .7037464 | .1264866 |
| .758 | .5893559 | .7030591 | .1268916 |
| .759 | .5897211 | .7023714 | .1272970 |
| .760 | .5900846 | .7016831 | .1277031 |
| .761 | .5904468 | .7009944 | .1281096 |
| .762 | .5908076 | .7003054 | .1285165 |
| .763 | .5911668 | .6996159 | .1289240 |
| .764 | .5915245 | .6989260 | .1293320 |
| .765 | .5918809 | .6982357 | .1297404 |
| .766 | .5922357 | .6975449 | .1301494 |
| .767 | .5925891 | .6968538 | .1305589 |
| .768 | .5929411 | .6961623 | .1309687 |
| .769 | .5932916 | .6954702 | .1313792 |
| .770 | .5936406 | .6947779 | .1317901 |
| .771 | .5939882 | .6940852 | .1322014 |
| .772 | .5943342 | .6933919 | .1326134 |
| .773 | .5946788 | .6926983 | .1330257 |
| .774 | .5950220 | .6920044 | .1334385 |
| .775 | .5953636 | .6913099 | .1338518 |
| .776 | .5957038 | .6906151 | .1342656 |
| .777 | .5960426 | .6899200 | .1346798 |
| .778 | .5963798 | .6892244 | .1350945 |
| .779 | .5967155 | .6885284 | .1355097 |
| .780 | .5970499 | .6878321 | .1359253 |
| .781 | .5973827 | .6871353 | .1363415 |
| .782 | .5977141 | .6864381 | .1367580 |
| .783 | .5980440 | .6857407 | .1371750 |
| .784 | .5983724 | .6850427 | .1375926 |
| .785 | .5986993 | .6843444 | .1380105 |
| .786 | .5990248 | .6836458 | .1384289 |
| .787 | .5993487 | .6829467 | .1388478 |
| .788 | .5996712 | .6822472 | .1392671 |
| .789 | .5999923 | .6815475 | .1396868 |
| .790 | .6003118 | .6808473 | .1401071 |
| .791 | .6006299 | .6801467 | .1405277 |
| .792 | .6009465 | .6794459 | .1409488 |
| .793 | .6012615 | .6787445 | .1413704 |
| .794 | .6015752 | .6780429 | .1417924 |
| .795 | .6018874 | .6773409 | .1422148 |
| .796 | .6021979 | .6766385 | .1426377 |
| .797 | .6025071 | .6759357 | .1430610 |
| .798 | .6028148 | .6752327 | .1434847 |
| .799 | .6031210 | .6745291 | .1439089 |
| .800 | .6034257 | .6738253 | .1443335 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .801 | 0.6037290 | 0.6731212 | 0.1447585 |
| .802 | .6040306 | .6724166 | .1451840 |
| .803 | .6043309 | .6717118 | .1456098 |
| .804 | .6046297 | .6710066 | .1460361 |
| .805 | .6049269 | .6703010 | .1464628 |
| .806 | .6052227 | .6695950 | .1468900 |
| .807 | .6055170 | .6688889 | .1473175 |
| .808 | .6058098 | .6681822 | .1477455 |
| .809 | .6061011 | .6674752 | .1481739 |
| .810 | .6063909 | .6667680 | .1486026 |
| .811 | .6066792 | .6660603 | .1490318 |
| .812 | .6069660 | .6653523 | .1494615 |
| .813 | .6072514 | .6646441 | .1498914 |
| .814 | .6075352 | .6639354 | .1503219 |
| .815 | .6078175 | .6632265 | .1507527 |
| .816 | .6080984 | .6625173 | .1511838 |
| .817 | .6083777 | .6618076 | .1516155 |
| .818 | .6086556 | .6610976 | .1520475 |
| .819 | .6089320 | .6603875 | .1524799 |
| .820 | .6092068 | .6596768 | .1529127 |
| .821 | .6094801 | .6589659 | .1533459 |
| .822 | .6097520 | .6582548 | .1537794 |
| .823 | .6100223 | .6575431 | .1542134 |
| .824 | .6102912 | .6568313 | .1546478 |
| .825 | .6105586 | .6561192 | .1550824 |
| .826 | .6108244 | .6554066 | .1555176 |
| .827 | .6110887 | .6546939 | .1559531 |
| .828 | .6113516 | .6539809 | .1563889 |
| .829 | .6116129 | .6532674 | .1568251 |
| .830 | .6118728 | .6525537 | .1573617 |
| .831 | .6121312 | .6518398 | .1576987 |
| .832 | .6123879 | .6511254 | .1581361 |
| .833 | .6126433 | .6504108 | .1585738 |
| .834 | .6128971 | .6496960 | .1590118 |
| .835 | .6131494 | .6489807 | .1594502 |
| .836 | .6134002 | .6482652 | .1598890 |
| .837 | .6136496 | .6475495 | .1603281 |
| .838 | .6138973 | .6468333 | .1607677 |
| .839 | .6141436 | .6461170 | .1612076 |
| .840 | .6143884 | .6454004 | .1616477 |
| .841 | .6146317 | .6446834 | .1620883 |
| .842 | .6148734 | .6439662 | .1625292 |
| .843 | .6151137 | .6432488 | .1629704 |
| .844 | .6153524 | .6425309 | .1634121 |
| .845 | .6155897 | .6418129 | .1638540 |
| .846 | .6158254 | .6410947 | .1642962 |
| .847 | .6160596 | .6403760 | .1647389 |
| .848 | .6162923 | .6396571 | .1651819 |
| .849 | .6165235 | .6389380 | .1656251 |
| .850 | .6167531 | .6382185 | .1660688 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-------------------|-------------------|
| 0 . 8 5 1 | 0 . 6 1 6 9 8 1 3 | 0 . 6 3 7 4 9 8 9 | 0 . 1 6 6 5 1 2 7 |
| . 8 5 2 | . 6 1 7 2 0 8 0 | . 6 3 6 7 7 9 0 | . 1 6 6 9 5 6 9 |
| . 8 5 3 | . 6 1 7 4 3 3 1 | . 6 3 6 0 5 8 7 | . 1 6 7 4 0 1 6 |
| . 8 5 4 | . 6 1 7 6 5 6 7 | . 6 3 5 3 3 8 2 | . 1 6 7 8 4 6 5 |
| . 8 5 5 | . 6 1 7 8 7 8 9 | . 6 3 4 6 1 7 6 | . 1 6 8 2 9 1 7 |
| | | | |
| . 8 5 6 | . 6 1 8 0 9 9 4 | . 6 3 3 8 9 6 5 | . 1 6 8 7 3 7 3 |
| . 8 5 7 | . 6 1 8 3 1 8 5 | . 6 3 3 1 7 5 3 | . 1 6 9 1 8 3 2 |
| . 8 5 8 | . 6 1 8 5 3 6 1 | . 6 3 2 4 5 3 9 | . 1 6 9 6 2 9 4 |
| . 8 5 9 | . 6 1 8 7 5 2 1 | . 6 3 1 7 3 2 0 | . 1 7 0 0 7 5 9 |
| . 8 6 0 | . 6 1 8 9 6 6 6 | . 6 3 1 0 1 0 0 | . 1 7 0 5 2 2 7 |
| | | | |
| . 8 6 1 | . 6 1 9 1 7 9 7 | . 6 3 0 2 8 7 9 | . 1 7 0 9 6 9 8 |
| . 8 6 2 | . 6 1 9 3 9 1 1 | . 6 2 9 5 6 5 3 | . 1 7 1 4 1 7 3 |
| . 8 6 3 | . 6 1 9 6 0 1 1 | . 6 2 8 8 4 2 5 | . 1 7 1 8 6 5 0 |
| . 8 6 4 | . 6 1 9 8 0 9 6 | . 6 2 8 1 1 9 6 | . 1 7 2 3 1 3 0 |
| . 8 6 5 | . 6 2 0 0 1 6 5 | . 6 2 7 3 9 6 3 | . 1 7 2 7 6 1 4 |
| | | | |
| . 8 6 6 | . 6 2 0 2 2 1 9 | . 6 2 6 6 7 2 8 | . 1 7 3 2 1 0 0 |
| . 8 6 7 | . 6 2 0 4 2 5 8 | . 6 2 5 9 4 9 2 | . 1 7 3 6 5 8 9 |
| . 8 6 8 | . 6 2 0 6 2 8 2 | . 6 2 5 2 2 5 2 | . 1 7 4 1 0 8 2 |
| . 8 6 9 | . 6 2 0 8 2 9 0 | . 6 2 4 5 0 1 0 | . 1 7 4 5 5 7 7 |
| . 8 7 0 | . 6 2 1 0 2 8 4 | . 6 2 3 7 7 6 7 | . 1 7 5 0 0 7 5 |
| | | | |
| . 8 7 1 | . 6 2 1 2 2 6 2 | . 6 2 3 0 5 1 9 | . 1 7 5 4 5 7 7 |
| . 8 7 2 | . 6 2 1 4 2 2 5 | . 6 2 2 3 2 7 0 | . 1 7 5 9 0 8 0 |
| . 8 7 3 | . 6 2 1 6 1 7 3 | . 6 2 1 6 0 2 0 | . 1 7 6 3 5 8 7 |
| . 8 7 4 | . 6 2 1 8 1 0 5 | . 6 2 0 8 7 6 6 | . 1 7 6 8 0 9 7 |
| . 8 7 5 | . 6 2 2 0 0 2 3 | . 6 2 0 1 5 1 1 | . 1 7 7 2 6 0 9 |
| | | | |
| . 8 7 6 | . 6 2 2 1 9 2 5 | . 6 1 9 4 2 5 4 | . 1 7 7 7 1 2 3 |
| . 8 7 7 | . 6 2 2 3 8 1 2 | . 6 1 8 6 9 9 3 | . 1 7 8 1 6 4 2 |
| . 8 7 8 | . 6 2 2 5 6 8 4 | . 6 1 7 9 7 3 0 | . 1 7 8 6 1 6 2 |
| . 8 7 9 | . 6 2 2 7 5 4 1 | . 6 1 7 2 4 6 7 | . 1 7 9 0 6 8 5 |
| . 8 8 0 | . 6 2 2 9 3 8 1 | . 6 1 6 5 2 0 0 | . 1 7 9 5 2 1 2 |
| | | | |
| . 8 8 1 | . 6 2 3 1 2 0 7 | . 6 1 5 7 9 3 1 | . 1 7 9 9 7 4 0 |
| . 8 8 2 | . 6 2 3 3 0 1 9 | . 6 1 5 0 6 6 1 | . 1 8 0 4 2 7 1 |
| . 8 8 3 | . 6 2 3 4 8 1 4 | . 6 1 4 3 3 8 7 | . 1 8 0 8 8 0 5 |
| . 8 8 4 | . 6 2 3 6 5 9 4 | . 6 1 3 6 1 1 2 | . 1 8 1 3 3 4 2 |
| . 8 8 5 | . 6 2 3 8 3 6 0 | . 6 1 2 8 8 3 6 | . 1 8 1 7 8 8 0 |
| | | | |
| . 8 8 6 | . 6 2 4 0 1 0 9 | . 6 1 2 1 5 5 6 | . 1 8 2 2 4 2 2 |
| . 8 8 7 | . 6 2 4 1 8 4 4 | . 6 1 1 4 2 7 5 | . 1 8 2 6 9 6 7 |
| . 8 8 8 | . 6 2 4 3 5 6 3 | . 6 1 0 6 9 9 3 | . 1 8 3 1 5 1 3 |
| . 8 8 9 | . 6 2 4 5 2 6 7 | . 6 0 9 9 7 0 7 | . 1 8 3 6 0 6 2 |
| . 8 9 0 | . 6 2 4 6 9 5 6 | . 6 0 9 2 4 1 9 | . 1 8 4 0 6 1 4 |
| | | | |
| . 8 9 1 | . 6 2 4 8 6 3 0 | . 6 0 8 5 1 3 1 | . 1 8 4 5 1 6 8 |
| . 8 9 2 | . 6 2 5 0 2 8 8 | . 6 0 7 7 8 3 9 | . 1 8 4 9 7 2 5 |
| . 8 9 3 | . 6 2 5 1 9 3 1 | . 6 0 7 0 5 4 6 | . 1 8 5 4 2 8 3 |
| . 8 9 4 | . 6 2 5 3 5 5 9 | . 6 0 6 3 2 5 2 | . 1 8 5 8 8 4 4 |
| . 8 9 5 | . 6 2 5 5 1 7 1 | . 6 0 5 5 9 5 5 | . 1 8 6 3 4 0 8 |
| | | | |
| . 8 9 6 | . 6 2 5 6 7 6 8 | . 6 0 4 8 6 5 6 | . 1 8 6 7 9 7 4 |
| . 8 9 7 | . 6 2 5 8 3 5 1 | . 6 0 4 1 3 5 6 | . 1 8 7 2 5 4 2 |
| . 8 9 8 | . 6 2 5 9 9 1 7 | . 6 0 3 4 0 5 3 | . 1 8 7 7 1 1 3 |
| . 8 9 9 | . 6 2 6 1 4 6 8 | . 6 0 2 6 7 4 9 | . 1 8 8 1 6 8 6 |
| . 9 0 0 | . 6 2 6 3 0 0 5 | . 6 0 1 9 4 4 4 | . 1 8 8 6 2 6 1 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| v/v_{cr} | $\rho v / \rho' v_{cr}$ | p/p' | A |
|------------|-------------------------|----------|----------|
| .901 | .6264526 | .6012135 | .1890839 |
| .902 | .6266031 | .6004826 | .1895419 |
| .903 | .6267522 | .5997515 | .1900000 |
| .904 | .6268997 | .5990202 | .1904584 |
| .905 | .6270456 | .5982887 | .1909170 |
| .906 | .6271902 | .5975572 | .1913758 |
| .907 | .6273330 | .5968253 | .1918349 |
| .908 | .6274744 | .5960933 | .1922941 |
| .909 | .6276143 | .5953612 | .1927535 |
| .910 | .6277526 | .5946288 | .1932132 |
| .911 | .6278894 | .5938964 | .1936731 |
| .912 | .6280247 | .5931639 | .1941331 |
| .913 | .6281584 | .5924310 | .1945934 |
| .914 | .6282907 | .5916981 | .1950538 |
| .915 | .6284214 | .5909651 | .1955144 |
| .916 | .6285505 | .5902318 | .1959753 |
| .917 | .6286781 | .5894984 | .1964363 |
| .918 | .6288043 | .5887649 | .1968975 |
| .919 | .6289288 | .5880312 | .1973589 |
| .920 | .6290518 | .5872973 | .1978205 |
| .921 | .6291734 | .5865635 | .1982822 |
| .922 | .6292933 | .5858293 | .1987441 |
| .923 | .6294118 | .5850950 | .1992062 |
| .924 | .6295287 | .5843607 | .1996685 |
| .925 | .6296441 | .5836261 | .2001309 |
| .926 | .6297579 | .5828915 | .2005935 |
| .927 | .6298703 | .5821568 | .2010563 |
| .928 | .6299810 | .5814218 | .2015193 |
| .929 | .6300903 | .5806868 | .2019824 |
| .930 | .6301981 | .5799517 | .2024456 |
| .931 | .6303042 | .5792163 | .2029091 |
| .932 | .6304089 | .5784809 | .2033726 |
| .933 | .6305121 | .5777454 | .2038363 |
| .934 | .6306137 | .5770097 | .2043002 |
| .935 | .6307137 | .5762739 | .2047643 |
| .936 | .6308124 | .5755381 | .2052284 |
| .937 | .6309093 | .5748020 | .2056927 |
| .938 | .6310048 | .5740659 | .2061572 |
| .939 | .6310988 | .5733298 | .2066217 |
| .940 | .6311912 | .5725933 | .2070865 |
| .941 | .6312821 | .5718569 | .2075514 |
| .942 | .6313715 | .5711204 | .2080164 |
| .943 | .6314593 | .5703837 | .2084815 |
| .944 | .6315456 | .5696469 | .2089468 |
| .945 | .6316304 | .5689102 | .2094121 |
| .946 | .6317136 | .5681731 | .2098777 |
| .947 | .6317953 | .5674361 | .2103433 |
| .948 | .6318755 | .5666990 | .2108090 |
| .949 | .6319541 | .5659617 | .2112749 |
| .950 | .6320312 | .5652244 | .2117409 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|-----------|
| 0.951 | 0.6321069 | 0.5644870 | 0.2122070 |
| .952 | .6321809 | .5637495 | .2126732 |
| .953 | .6322534 | .5630119 | .2131395 |
| .954 | .6323244 | .5622743 | .2136059 |
| .955 | .6323938 | .5615365 | .2140725 |
| .956 | .6324618 | .5607986 | .2145391 |
| .957 | .6325282 | .5600608 | .2150058 |
| .958 | .6325930 | .5593227 | .2154727 |
| .959 | .6326564 | .5585847 | .2159396 |
| .960 | .6327183 | .5578466 | .2164065 |
| .961 | .6327785 | .5571083 | .2168737 |
| .962 | .6328372 | .5563700 | .2173409 |
| .963 | .6328945 | .5556318 | .2178081 |
| .964 | .6329502 | .5548933 | .2182755 |
| .965 | .6330043 | .5541548 | .2187429 |
| .966 | .6330570 | .5534164 | .2192104 |
| .967 | .6331081 | .5526777 | .2196780 |
| .968 | .6331577 | .5519390 | .2201457 |
| .969 | .6332058 | .5512004 | .2206134 |
| .970 | .6332522 | .5504615 | .2210813 |
| .971 | .6332972 | .5497227 | .2215491 |
| .972 | .6333408 | .5489839 | .2220170 |
| .973 | .6333826 | .5482449 | .2224851 |
| .974 | .6334230 | .5475060 | .2229531 |
| .975 | .6334620 | .5467670 | .2234212 |
| .976 | .6334993 | .5460279 | .2238894 |
| .977 | .6335351 | .5452888 | .2243577 |
| .978 | .6335695 | .5445497 | .2248259 |
| .979 | .6336022 | .5438105 | .2252943 |
| .980 | .6336334 | .5430712 | .2257627 |
| .981 | .6336632 | .5423321 | .2262311 |
| .982 | .6336913 | .5415927 | .2266996 |
| .983 | .6337180 | .5408534 | .2271681 |
| .984 | .6337432 | .5401141 | .2276366 |
| .985 | .6337668 | .5393746 | .2281052 |
| .986 | .6337889 | .5386352 | .2285739 |
| .987 | .6338095 | .5378959 | .2290425 |
| .988 | .6338285 | .5371563 | .2295112 |
| .989 | .6338460 | .5364169 | .2299799 |
| .990 | .6338620 | .5356774 | .2304486 |
| .991 | .6338764 | .5349378 | .2309174 |
| .992 | .6338894 | .5341983 | .2313862 |
| .993 | .6339009 | .5334589 | .2318549 |
| .994 | .6339107 | .5327192 | .2323238 |
| .995 | .6339191 | .5319796 | .2327926 |
| .996 | .6339260 | .5312402 | .2332614 |
| .997 | .6339312 | .5305005 | .2337303 |
| .998 | .6339350 | .5297609 | .2341991 |
| .999 | .6339374 | .5290214 | .2346679 |
| 1.000 | .6339381 | .5282817 | .2351368 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.001 | .63339373 | 0.5275421 | 0.2356057 |
| 1.002 | .63339351 | .5268026 | .2360745 |
| 1.003 | .63339312 | .5260629 | .2365434 |
| 1.004 | .63339259 | .5253233 | .2370122 |
| 1.005 | .63339191 | .5245839 | .2374810 |
| 1.006 | .63339107 | .5238442 | .2379499 |
| 1.007 | .63339008 | .5231047 | .2384187 |
| 1.008 | .63338895 | .5223652 | .2388874 |
| 1.009 | .63338765 | .5216256 | .2393562 |
| 1.010 | .63338621 | .5208861 | .2398250 |
| 1.011 | .63338462 | .5201466 | .2402937 |
| 1.012 | .63338286 | .5194071 | .2407624 |
| 1.013 | .63338097 | .5186676 | .2412311 |
| 1.014 | .63337892 | .5179283 | .2416997 |
| 1.015 | .63337671 | .5171888 | .2421684 |
| 1.016 | .63337436 | .5164494 | .2426370 |
| 1.017 | .63337186 | .5157101 | .2431055 |
| 1.018 | .63336919 | .5149707 | .2435740 |
| 1.019 | .63336638 | .5142315 | .2440425 |
| 1.020 | .63336343 | .5134923 | .2445109 |
| 1.021 | .63336031 | .5127530 | .2449793 |
| 1.022 | .63335705 | .5120138 | .2454477 |
| 1.023 | .63335364 | .5112747 | .2459159 |
| 1.024 | .63335007 | .5105355 | .2463842 |
| 1.025 | .63334635 | .5097965 | .2468524 |
| 1.026 | .63334249 | .5090575 | .2473205 |
| 1.027 | .63333846 | .5083185 | .2477886 |
| 1.028 | .63333429 | .5075796 | .2482566 |
| 1.029 | .63332998 | .5068408 | .2487245 |
| 1.030 | .63332550 | .5061019 | .2491924 |
| 1.031 | .63332087 | .5053631 | .2496602 |
| 1.032 | .63331610 | .5046244 | .2501279 |
| 1.033 | .63331117 | .5038857 | .2505956 |
| 1.034 | .63330610 | .5031471 | .2510632 |
| 1.035 | .63330087 | .5024086 | .2515307 |
| 1.036 | .6329549 | .5016701 | .2519982 |
| 1.037 | .6328996 | .5009317 | .2524656 |
| 1.038 | .6328429 | .5001934 | .2529328 |
| 1.039 | .6327845 | .4994550 | .2534000 |
| 1.040 | .6327247 | .4987168 | .2538672 |
| 1.041 | .6326634 | .4979788 | .2543341 |
| 1.042 | .6326006 | .4972406 | .2548011 |
| 1.043 | .6325362 | .4965026 | .2552679 |
| 1.044 | .6324705 | .4957648 | .2557346 |
| 1.045 | .6324031 | .4950269 | .2562013 |
| 1.046 | .6323342 | .4942891 | .2566578 |
| 1.047 | .6322640 | .4935515 | .2571342 |
| 1.048 | .6321921 | .4928138 | .2576006 |
| 1.049 | .6321187 | .4920763 | .2580668 |
| 1.050 | .6320440 | .4913389 | .2585329 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.051 | 0.6319676 | 0.4906015 | 0.2589990 |
| 1.052 | .6318897 | .4898643 | .2594648 |
| 1.053 | .6318104 | .4891272 | .2599306 |
| 1.054 | .6317295 | .4883900 | .2603963 |
| 1.055 | .6316472 | .4876531 | .2608618 |
| 1.056 | .6315634 | .4869163 | .2613272 |
| 1.057 | .6314781 | .4861794 | .2617925 |
| 1.058 | .6313912 | .4854428 | .2622577 |
| 1.059 | .6313030 | .4847063 | .2627227 |
| 1.060 | .6312131 | .4839697 | .2631876 |
| 1.061 | .6311218 | .4832334 | .2636524 |
| 1.062 | .6310291 | .4824972 | .2641170 |
| 1.063 | .6309347 | .4817610 | .2645815 |
| 1.064 | .6308389 | .4810249 | .2650459 |
| 1.065 | .6307417 | .4802891 | .2655100 |
| 1.066 | .6306429 | .4795532 | .2659741 |
| 1.067 | .6305426 | .4788175 | .2664381 |
| 1.068 | .6304409 | .4780820 | .2669018 |
| 1.069 | .6303376 | .4773465 | .2673654 |
| 1.070 | .6302329 | .4766111 | .2678289 |
| 1.071 | .6301267 | .4758760 | .2682922 |
| 1.072 | .6300190 | .4751408 | .2687554 |
| 1.073 | .6299098 | .4744059 | .2692184 |
| 1.074 | .6297992 | .4736711 | .2696812 |
| 1.075 | .6296869 | .4729364 | .2701439 |
| 1.076 | .6295733 | .4722018 | .2706064 |
| 1.077 | .6294582 | .4714674 | .2710687 |
| 1.078 | .6293415 | .4707331 | .2715309 |
| 1.079 | .6292234 | .4699989 | .2719.929 |
| 1.080 | .6291039 | .4692649 | .2724547 |
| 1.081 | .6289828 | .4685310 | .2729164 |
| 1.082 | .6288603 | .4677972 | .2733779 |
| 1.083 | .6287363 | .4670637 | .2738391 |
| 1.084 | .6286108 | .4663302 | .2743002 |
| 1.085 | .6284838 | .4655969 | .2747612 |
| 1.086 | .6283554 | .4648638 | .2752218 |
| 1.087 | .6282254 | .4641307 | .2756824 |
| 1.088 | .6280940 | .4633979 | .2761428 |
| 1.089 | .6279612 | .4626652 | .2766029 |
| 1.090 | .6278267 | .4619326 | .2770629 |
| 1.091 | .6276909 | .4612002 | .2775227 |
| 1.092 | .6275537 | .4604681 | .2779822 |
| 1.093 | .6274148 | .4597360 | .2784416 |
| 1.094 | .6272746 | .4590041 | .2789007 |
| 1.095 | .6271329 | .4582724 | .2793596 |
| 1.096 | .6269897 | .4575407 | .2798184 |
| 1.097 | .6268450 | .4568093 | .2802769 |
| 1.098 | .6266990 | .4560782 | .2807352 |
| 1.099 | .6265513 | .4553470 | .2811933 |
| 1.100 | .6264022 | .4546162 | .2816512 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $pV/p'V_{cr}$ | p/p' | A |
|------------|---------------|-----------|-----------|
| 1.101 | 0.6262518 | 0.4538855 | 0.2821089 |
| 1.102 | .6260997 | .4531549 | .2825664 |
| 1.103 | .6259463 | .4524245 | .2830236 |
| 1.104 | .6257914 | .4516944 | .2834805 |
| 1.105 | .6256350 | .4509644 | .2839373 |
| 1.106 | .6254771 | .4502345 | .2843939 |
| 1.107 | .6253179 | .4495050 | .2848501 |
| 1.108 | .6251570 | .4487755 | .2853063 |
| 1.109 | .6249948 | .4480462 | .2857621 |
| 1.110 | .6248312 | .4473172 | .2862177 |
| 1.111 | .6246660 | .4465883 | .2866731 |
| 1.112 | .6244994 | .4458596 | .2871282 |
| 1.113 | .6243314 | .4451312 | .2875830 |
| 1.114 | .6241618 | .4444028 | .2880377 |
| 1.115 | .6239908 | .4436747 | .2884921 |
| 1.116 | .6238185 | .4429469 | .2889462 |
| 1.117 | .6236446 | .4422192 | .2894001 |
| 1.118 | .6234692 | .4414917 | .2898537 |
| 1.119 | .6232925 | .4407645 | .2903070 |
| 1.120 | .6231142 | .4400373 | .2907602 |
| 1.121 | .6229346 | .4393105 | .2912131 |
| 1.122 | .6227535 | .4385839 | .2916656 |
| 1.123 | .6225709 | .4378574 | .2921180 |
| 1.124 | .6223869 | .4371311 | .2925700 |
| 1.125 | .62222015 | .4364052 | .2930218 |
| 1.126 | .6220145 | .4356793 | .2934733 |
| 1.127 | .6218262 | .4349538 | .2939246 |
| 1.128 | .6216364 | .4342285 | .2943755 |
| 1.129 | .6214451 | .4335033 | .2948263 |
| 1.130 | .6212525 | .4327784 | .2952767 |
| 1.131 | .6210584 | .4320538 | .2957268 |
| 1.132 | .6208628 | .4313292 | .2961767 |
| 1.133 | .6206658 | .4306050 | .2966263 |
| 1.134 | .6204675 | .4298811 | .2970755 |
| 1.135 | .6202675 | .4291573 | .2975246 |
| 1.136 | .6200662 | .4284337 | .2979733 |
| 1.137 | .6198636 | .4277105 | .2984217 |
| 1.138 | .6196593 | .4269874 | .2988698 |
| 1.139 | .6194538 | .4262646 | .2993176 |
| 1.140 | .6192468 | .4255421 | .2997651 |
| 1.141 | .6190383 | .4248197 | .3002124 |
| 1.142 | .6188284 | .4240976 | .3006593 |
| 1.143 | .6186172 | .4233758 | .3011059 |
| 1.144 | .6184044 | .4226541 | .3015523 |
| 1.145 | .6181902 | .4219328 | .3019983 |
| 1.146 | .6179747 | .4212118 | .3024439 |
| 1.147 | .6177576 | .4204903 | .3028894 |
| 1.148 | .6175392 | .4197703 | .3033344 |
| 1.149 | .6173194 | .4190500 | .3037791 |
| 1.150 | .6170980 | .4183298 | .3042236 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.151 | 0.6168753 | 0.4176100 | 0.3046677 |
| 1.152 | .6166513 | .4168905 | .3051115 |
| 1.153 | .6164257 | .4161712 | .3055550 |
| 1.154 | .6161988 | .4154521 | .3059982 |
| 1.155 | .6159705 | .4147334 | .3064409 |
| 1.156 | .6157406 | .4140149 | .3068835 |
| 1.157 | .6155094 | .4132967 | .3073256 |
| 1.158 | .6152769 | .4125787 | .3077674 |
| 1.159 | .6150428 | .4118610 | .3082089 |
| 1.160 | .6148074 | .4111436 | .3086501 |
| 1.161 | .6145706 | .4104265 | .3090909 |
| 1.162 | .6143323 | .4097096 | .3095314 |
| 1.163 | .6140927 | .4089930 | .3099715 |
| 1.164 | .6138517 | .4082768 | .3104113 |
| 1.165 | .6136092 | .4075607 | .3108508 |
| 1.166 | .6133653 | .4068450 | .3112899 |
| 1.167 | .6131201 | .4061296 | .3117286 |
| 1.168 | .6128734 | .4054143 | .3121670 |
| 1.169 | .6126254 | .4046995 | .3126050 |
| 1.170 | .6123760 | .4039849 | .3130427 |
| 1.171 | .6121250 | .4032706 | .3134800 |
| 1.172 | .6118728 | .4025566 | .3139170 |
| 1.173 | .6116192 | .4018430 | .3143536 |
| 1.174 | .6113641 | .4011295 | .3147898 |
| 1.175 | .6111077 | .4004164 | .3152257 |
| 1.176 | .6108499 | .3997036 | .3156612 |
| 1.177 | .6105906 | .3989911 | .3160964 |
| 1.178 | .6103301 | .3982789 | .3165312 |
| 1.179 | .6100681 | .3975670 | .3169655 |
| 1.180 | .6098047 | .3968554 | .3173996 |
| 1.181 | .6095399 | .3961441 | .3178332 |
| 1.182 | .6092739 | .3954332 | .3182665 |
| 1.183 | .6090063 | .3947224 | .3186994 |
| 1.184 | .6087373 | .3940121 | .3191319 |
| 1.185 | .6084671 | .3933021 | .3195640 |
| 1.186 | .6081954 | .3925923 | .3199958 |
| 1.187 | .6079223 | .3918829 | .3204271 |
| 1.188 | .6076480 | .3911739 | .3208581 |
| 1.189 | .6073721 | .3904651 | .3212887 |
| 1.190 | .6070950 | .3897567 | .3217189 |
| 1.191 | .6068165 | .3890486 | .3221486 |
| 1.192 | .6065365 | .3883407 | .3225781 |
| 1.193 | .6062552 | .3876333 | .3230071 |
| 1.194 | .6059726 | .3869262 | .3234356 |
| 1.195 | .6056885 | .3862193 | .3238639 |
| 1.196 | .6054031 | .3855129 | .3242917 |
| 1.197 | .6051164 | .3848068 | .3247190 |
| 1.198 | .6048283 | .3841009 | .3251461 |
| 1.199 | .6045388 | .3833955 | .3255727 |
| 1.200 | .6042480 | .3826904 | .3259988 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.201 | 0.6039558 | 0.3819856 | 0.3264246 |
| 1.202 | .6036622 | .3812811 | .3268499 |
| 1.203 | .6033673 | .3805771 | .3272748 |
| 1.204 | .6030710 | .3798733 | .3276994 |
| 1.205 | .6027733 | .3791698 | .3281235 |
| 1.206 | .6024744 | .3784669 | .3285471 |
| 1.207 | .6021740 | .3777641 | .3289704 |
| 1.208 | .6018724 | .3770617 | .3293933 |
| 1.209 | .6015694 | .3763598 | .3298157 |
| 1.210 | .6012649 | .3756581 | .3302377 |
| 1.211 | .6009592 | .3749568 | .3306592 |
| 1.212 | .6006522 | .3742559 | .3310803 |
| 1.213 | .6003437 | .3735552 | .3315011 |
| 1.214 | .6000340 | .3728550 | .3319213 |
| 1.215 | .5997229 | .3721552 | .3323411 |
| 1.216 | .5994104 | .3714557 | .3327605 |
| 1.217 | .5990966 | .3707565 | .3331795 |
| 1.218 | .5987816 | .3700578 | .3335980 |
| 1.219 | .5984651 | .3693594 | .3340161 |
| 1.220 | .5981473 | .3686614 | .3344337 |
| 1.221 | .5978282 | .3679638 | .3348509 |
| 1.222 | .5975077 | .3672664 | .3352676 |
| 1.223 | .5971859 | .3665695 | .3356839 |
| 1.224 | .5968629 | .3658731 | .3360997 |
| 1.225 | .5965384 | .3651768 | .3365152 |
| 1.226 | .5962126 | .3644811 | .3369301 |
| 1.227 | .5958856 | .3637857 | .3373446 |
| 1.228 | .5955571 | .3630907 | .3377586 |
| 1.229 | .5952274 | .3623960 | .3381722 |
| 1.230 | .5948964 | .3617019 | .3385853 |
| 1.231 | .5945640 | .3610080 | .3389980 |
| 1.232 | .5942303 | .3603145 | .3394102 |
| 1.233 | .5938954 | .3596215 | .3398219 |
| 1.234 | .5935590 | .3589287 | .3402332 |
| 1.235 | .5932214 | .3582365 | .3406439 |
| 1.236 | .5928825 | .3575446 | .3410542 |
| 1.237 | .5925422 | .3568531 | .3414641 |
| 1.238 | .5922006 | .3561620 | .3418735 |
| 1.239 | .5918579 | .3554713 | .3422824 |
| 1.240 | .5915136 | .3547810 | .3426909 |
| 1.241 | .5911682 | .3540911 | .3430989 |
| 1.242 | .5908215 | .3534016 | .3435063 |
| 1.243 | .5904733 | .3527125 | .3439134 |
| 1.244 | .5901240 | .3520238 | .3443199 |
| 1.245 | .5897734 | .3513356 | .3447259 |
| 1.246 | .5894213 | .3506477 | .3451315 |
| 1.247 | .5890681 | .3499602 | .3455366 |
| 1.248 | .5887136 | .3492732 | .3459411 |
| 1.249 | .5883577 | .3485865 | .3463453 |
| 1.250 | .5880006 | .3479003 | .3467489 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.251 | 0.5876422 | 0.3472146 | 0.3471520 |
| 1.252 | .5872825 | .3465292 | .3475546 |
| 1.253 | .5869215 | .3458442 | .3479568 |
| 1.254 | .5865593 | .3451597 | .3483584 |
| 1.255 | .5861957 | .3444756 | .3487596 |
| 1.256 | .5858308 | .3437919 | .3491602 |
| 1.257 | .5854648 | .3431087 | .3495603 |
| 1.258 | .5850974 | .3424258 | .3499600 |
| 1.259 | .5847287 | .3417434 | .3503591 |
| 1.260 | .5843568 | .3410615 | .3507578 |
| 1.261 | .5839876 | .3403799 | .3511559 |
| 1.262 | .5836151 | .3396988 | .3515535 |
| 1.263 | .5832414 | .3390182 | .3519506 |
| 1.264 | .5828663 | .3383379 | .3523473 |
| 1.265 | .5824901 | .3376581 | .3527434 |
| 1.266 | .5821126 | .3369788 | .3531389 |
| 1.267 | .5817337 | .3362999 | .3535340 |
| 1.268 | .5813537 | .3356214 | .3539286 |
| 1.269 | .5809724 | .3349434 | .3543226 |
| 1.270 | .5805898 | .3342658 | .3547162 |
| 1.271 | .5802059 | .3335887 | .3551092 |
| 1.272 | .5798209 | .3329120 | .3555016 |
| 1.273 | .5794345 | .3322235 | .35589936 |
| 1.274 | .5790469 | .3315600 | .3562850 |
| 1.275 | .5786582 | .3308847 | .3566759 |
| 1.276 | .5782680 | .3302098 | .3570663 |
| 1.277 | .5778767 | .3295353 | .3574562 |
| 1.278 | .5774842 | .3288614 | .3578455 |
| 1.279 | .5770903 | .3281879 | .3582343 |
| 1.280 | .5766953 | .3275148 | .3586226 |
| 1.281 | .5762990 | .3268423 | .3590103 |
| 1.282 | .5759014 | .3261701 | .3593976 |
| 1.283 | .5755027 | .3254985 | .3597842 |
| 1.284 | .5751027 | .3248273 | .3601703 |
| 1.285 | .5747015 | .3241566 | .3605560 |
| 1.286 | .5742990 | .3234863 | .3609410 |
| 1.287 | .5738954 | .3228166 | .3613255 |
| 1.288 | .5734904 | .3221472 | .3617095 |
| 1.289 | .5730843 | .3214784 | .3620930 |
| 1.290 | .5726770 | .3208101 | .3624758 |
| 1.291 | .5722683 | .3201422 | .3628582 |
| 1.292 | .5718585 | .3194748 | .3632400 |
| 1.293 | .5714476 | .3188079 | .3636212 |
| 1.294 | .5710353 | .3181414 | .3640019 |
| 1.295 | .5706219 | .3174754 | .3643821 |
| 1.296 | .5702073 | .3168100 | .3647617 |
| 1.297 | .5697913 | .3161449 | .3651407 |
| 1.298 | .5693743 | .3154804 | .3655192 |
| 1.299 | .5689561 | .3148164 | .3658971 |
| 1.300 | .5685365 | .3141529 | .3662745 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.301 | 0.5681158 | 0.3134898 | 0.3666514 |
| 1.302 | .5676940 | .3128273 | .3670276 |
| 1.303 | .5672708 | .3121652 | .3674034 |
| 1.304 | .5668466 | .3115036 | .3677785 |
| 1.305 | .5664211 | .3108426 | .3681531 |
| 1.306 | .5659944 | .3101820 | .3685271 |
| 1.307 | .5655665 | .3095219 | .3689006 |
| 1.308 | .5651375 | .3088624 | .3692734 |
| 1.309 | .5647072 | .3082032 | .3696458 |
| 1.310 | .5642758 | .3075447 | .3700176 |
| 1.311 | .5638433 | .3068866 | .3703887 |
| 1.312 | .5634094 | .3062290 | .3707594 |
| 1.313 | .5629744 | .3055720 | .3711294 |
| 1.314 | .5625383 | .3049155 | .3714989 |
| 1.315 | .5621009 | .3042594 | .3718678 |
| 1.316 | .5616624 | .3036039 | .3722361 |
| 1.317 | .5612228 | .3029489 | .3726039 |
| 1.318 | .5607819 | .3022943 | .3729711 |
| 1.319 | .5603399 | .3016403 | .3733377 |
| 1.320 | .5598967 | .3009869 | .3737036 |
| 1.321 | .5594523 | .3003339 | .3740691 |
| 1.322 | .5590068 | .2996815 | .3744340 |
| 1.323 | .5585602 | .2990296 | .3747982 |
| 1.324 | .5581123 | .2983782 | .3751619 |
| 1.325 | .5576633 | .2977273 | .3755251 |
| 1.326 | .5572132 | .2970770 | .3758876 |
| 1.327 | .5567619 | .2964271 | .3762495 |
| 1.328 | .5563094 | .2957779 | .3766109 |
| 1.329 | .5558559 | .2951291 | .3769716 |
| 1.330 | .5554010 | .2944809 | .3773318 |
| 1.331 | .5549451 | .2938332 | .3776914 |
| 1.332 | .5544882 | .2931860 | .3780504 |
| 1.333 | .5540299 | .2925394 | .3784088 |
| 1.334 | .5535706 | .2918933 | .3787666 |
| 1.335 | .5531102 | .2912477 | .3791238 |
| 1.336 | .5526485 | .2906027 | .3794805 |
| 1.337 | .5521858 | .2899582 | .3798365 |
| 1.338 | .5517220 | .2893143 | .3801919 |
| 1.339 | .5512569 | .2886708 | .3805468 |
| 1.340 | .5507908 | .2880280 | .3809010 |
| 1.341 | .5503236 | .2873857 | .3812546 |
| 1.342 | .5498552 | .2867439 | .3816077 |
| 1.343 | .5493857 | .2861027 | .3819601 |
| 1.344 | .5489152 | .2854620 | .3823119 |
| 1.345 | .5484434 | .2848219 | .3826631 |
| 1.346 | .5479705 | .2841823 | .3830138 |
| 1.347 | .5474966 | .2835433 | .3833637 |
| 1.348 | .5470215 | .2829048 | .3837132 |
| 1.349 | .5465453 | .2822669 | .3840620 |
| 1.350 | .5460681 | .2816296 | .3844101 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.351 | 0.5455896 | 0.2809927 | 0.3847578 |
| 1.352 | .5451101 | .2803565 | .3851047 |
| 1.353 | .5446296 | .2797208 | .3854511 |
| 1.354 | .5441478 | .2790857 | .3857968 |
| 1.355 | .5436650 | .2784511 | .3861420 |
| 1.356 | .5431812 | .2778172 | .3864865 |
| 1.357 | .5426962 | .2771837 | .3868304 |
| 1.358 | .5422101 | .2765508 | .3871737 |
| 1.359 | .5417230 | .2759186 | .3875164 |
| 1.360 | .5412347 | .2752868 | .3878585 |
| 1.361 | .5407454 | .2746557 | .3881999 |
| 1.362 | .5402550 | .2740251 | .3885407 |
| 1.363 | .5397634 | .2733951 | .3888810 |
| 1.364 | .5392709 | .2727656 | .3892206 |
| 1.365 | .5387773 | .2721368 | .3895595 |
| 1.366 | .5382825 | .2715085 | .3898979 |
| 1.367 | .5377867 | .2708808 | .3902356 |
| 1.368 | .5372899 | .2702537 | .3905727 |
| 1.369 | .5367919 | .2696271 | .3909092 |
| 1.370 | .5362929 | .2690011 | .3912450 |
| 1.371 | .5357929 | .2683758 | .3915802 |
| 1.372 | .5352917 | .2677509 | .3919149 |
| 1.373 | .5347896 | .2671267 | .3922489 |
| 1.374 | .5342864 | .2665031 | .3925822 |
| 1.375 | .5337820 | .2658801 | .3929149 |
| 1.376 | .5332767 | .2652576 | .3932470 |
| 1.377 | .5327704 | .2646358 | .3935785 |
| 1.378 | .5322629 | .2640145 | .3939093 |
| 1.379 | .5317544 | .2633938 | .3942395 |
| 1.380 | .5312449 | .2627738 | .3945691 |
| 1.381 | .5307343 | .2621542 | .3948981 |
| 1.382 | .5302227 | .2615353 | .3952264 |
| 1.383 | .5297101 | .2609171 | .3955540 |
| 1.384 | .5291964 | .2602993 | .3958811 |
| 1.385 | .5286817 | .2596823 | .3962075 |
| 1.386 | .5281660 | .2590658 | .3965332 |
| 1.387 | .5276492 | .2584499 | .3968584 |
| 1.388 | .5271314 | .2578346 | .3971829 |
| 1.389 | .5266126 | .2572199 | .3975067 |
| 1.390 | .5260927 | .2566058 | .3978300 |
| 1.391 | .5255719 | .2559923 | .3981526 |
| 1.392 | .5250501 | .2553795 | .3984745 |
| 1.393 | .5245271 | .2547672 | .3987958 |
| 1.394 | .5240032 | .2541556 | .3991165 |
| 1.395 | .5234784 | .2535446 | .3994365 |
| 1.396 | .5229524 | .2529341 | .3997559 |
| 1.397 | .5224255 | .2523243 | .4000746 |
| 1.398 | .5218976 | .2517152 | .4003927 |
| 1.399 | .5213686 | .2511066 | .4007102 |
| 1.400 | .5208387 | .2504986 | .4010270 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.401 | 0.5203079 | 0.2498913 | 0.4013431 |
| 1.402 | .5197759 | .2492846 | .4016587 |
| 1.403 | .5192430 | .2486785 | .4019735 |
| 1.404 | .5187092 | .2480730 | .4022877 |
| 1.405 | .5181743 | .2474682 | .4026013 |
| 1.406 | .5176384 | .2468639 | .4029143 |
| 1.407 | .5171016 | .2462604 | .4032265 |
| 1.408 | .5165637 | .2456573 | .4035382 |
| 1.409 | .5160250 | .2450550 | .4038492 |
| 1.410 | .5154853 | .2444533 | .4041595 |
| 1.411 | .5149444 | .2438522 | .4044692 |
| 1.412 | .5144027 | .2432518 | .4047782 |
| 1.413 | .5138601 | .2426520 | .4050866 |
| 1.414 | .5133164 | .2420528 | .4053944 |
| 1.415 | .5127718 | .2414542 | .4057014 |
| 1.416 | .5122263 | .2408563 | .4060079 |
| 1.417 | .5116797 | .2402590 | .4063136 |
| 1.418 | .5111322 | .2396624 | .4066188 |
| 1.419 | .5105839 | .2390664 | .4069232 |
| 1.420 | .5100344 | .2384710 | .4072271 |
| 1.421 | .5094841 | .2378763 | .4075302 |
| 1.422 | .5089329 | .2372823 | .4078327 |
| 1.423 | .5083806 | .2366888 | .4081346 |
| 1.424 | .5078274 | .2360960 | .4084358 |
| 1.425 | .5072734 | .2355039 | .4087363 |
| 1.426 | .5067182 | .2349123 | .4090362 |
| 1.427 | .5051623 | .2343215 | .4093354 |
| 1.428 | .5056055 | .2337314 | .4096340 |
| 1.429 | .5050476 | .2331418 | .4099319 |
| 1.430 | .5044888 | .2325529 | .4102292 |
| 1.431 | .5039292 | .2319647 | .4105258 |
| 1.432 | .5033685 | .2313770 | .4108217 |
| 1.433 | .5028070 | .2307901 | .4111170 |
| 1.434 | .5022446 | .2302038 | .4114116 |
| 1.435 | .5016812 | .2296182 | .4117056 |
| 1.436 | .5011169 | .2290338 | .4119989 |
| 1.437 | .5005518 | .2284490 | .4122915 |
| 1.438 | .4999857 | .2278653 | .4125835 |
| 1.439 | .4994187 | .2272823 | .4128748 |
| 1.440 | .4988509 | .2267000 | .4131655 |
| 1.441 | .4982820 | .2261183 | .4134555 |
| 1.442 | .4977123 | .2255373 | .4137448 |
| 1.443 | .4971418 | .2249570 | .4140335 |
| 1.444 | .4965703 | .2243773 | .4143215 |
| 1.445 | .4959979 | .2237983 | .4146088 |
| 1.446 | .4954247 | .2232200 | .4148955 |
| 1.447 | .4948505 | .2226423 | .4151816 |
| 1.448 | .4942755 | .2220653 | .4154669 |
| 1.449 | .4936997 | .2214891 | .4157516 |
| 1.450 | .4931229 | .2209134 | .4160356 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.451 | 0.4925452 | 0.2203384 | 0.4163190 |
| 1.452 | .4919667 | .2197641 | .4166017 |
| 1.453 | .4913873 | .2191905 | .4168837 |
| 1.454 | .4908071 | .2186175 | .4171651 |
| 1.455 | .4902260 | .2180453 | .4174458 |
| 1.456 | .4896440 | .2174737 | .4177259 |
| 1.457 | .4890611 | .2169027 | .4180052 |
| 1.458 | .4884775 | .2163326 | .4182839 |
| 1.459 | .4878929 | .2157630 | .4185620 |
| 1.460 | .4873075 | .2151941 | .4188394 |
| 1.461 | .4867213 | .2146260 | .4191161 |
| 1.462 | .4861342 | .2140584 | .4193921 |
| 1.463 | .4855462 | .2134916 | .4196675 |
| 1.464 | .4849575 | .2129255 | .4199422 |
| 1.465 | .4843679 | .2123600 | .4202163 |
| 1.466 | .4837774 | .2117953 | .4204897 |
| 1.467 | .4831862 | .2112313 | .4207624 |
| 1.468 | .4825941 | .2106679 | .4210344 |
| 1.469 | .4820011 | .2101052 | .4213058 |
| 1.470 | .4814074 | .2095432 | .4215765 |
| 1.471 | .4808128 | .2089819 | .4218466 |
| 1.472 | .4802174 | .2084213 | .4221159 |
| 1.473 | .4796212 | .2078614 | .4223846 |
| 1.474 | .4790241 | .2073022 | .4226527 |
| 1.475 | .4784263 | .2067437 | .4229201 |
| 1.476 | .4778277 | .2061859 | .4231867 |
| 1.477 | .4772282 | .2056287 | .4234528 |
| 1.478 | .4766279 | .2050723 | .4237182 |
| 1.479 | .4760269 | .2045166 | .4239829 |
| 1.480 | .4754250 | .2039616 | .4242469 |
| 1.481 | .4748223 | .2034073 | .4245103 |
| 1.482 | .4742189 | .2028537 | .4247730 |
| 1.483 | .4736146 | .2023008 | .4250350 |
| 1.484 | .4730096 | .2017486 | .4252964 |
| 1.485 | .4724038 | .2011971 | .4255570 |
| 1.486 | .4717972 | .2006463 | .4258171 |
| 1.487 | .4711898 | .2000962 | .4260764 |
| 1.488 | .4705817 | .1995469 | .4263351 |
| 1.489 | .4699727 | .1989982 | .4265931 |
| 1.490 | .4693630 | .1984503 | .4268505 |
| 1.491 | .4687526 | .1979030 | .4271072 |
| 1.492 | .4681413 | .1973565 | .4273632 |
| 1.493 | .4675293 | .1968107 | .4276185 |
| 1.494 | .4669166 | .1962656 | .4278732 |
| 1.495 | .4663030 | .1957212 | .4281272 |
| 1.496 | .4656888 | .1951775 | .4283806 |
| 1.497 | .4650738 | .1946346 | .4286332 |
| 1.498 | .4644580 | .1940924 | .4288853 |
| 1.499 | .4638415 | .1935509 | .4291366 |
| 1.500 | .4632243 | .1930101 | .4293873 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | ρ/ρ' | A |
|------------|-----------------------|--------------|-----------|
| 1.501 | 0.4626062 | 0.1924700 | 0.4296373 |
| 1.502 | .4619875 | .1919307 | .4298866 |
| 1.503 | .4613681 | .1913921 | .4301353 |
| 1.504 | .4607478 | .1908541 | .4303833 |
| 1.505 | .4601268 | .1903170 | .4306306 |
| 1.506 | .4595052 | .1897805 | .4308773 |
| 1.507 | .4588828 | .1892448 | .4311233 |
| 1.508 | .4582597 | .1887098 | .4313686 |
| 1.509 | .4576359 | .1881755 | .4316133 |
| 1.510 | .4570113 | .1876420 | .4318573 |
| 1.511 | .4563860 | .1871091 | .4321007 |
| 1.512 | .4557601 | .1865771 | .4323433 |
| 1.513 | .4551334 | .1860457 | .4325853 |
| 1.514 | .4545060 | .1855151 | .4328267 |
| 1.515 | .4538779 | .1849852 | .4330673 |
| 1.516 | .4532491 | .1844560 | .4333073 |
| 1.517 | .4526196 | .1839276 | .4335467 |
| 1.518 | .4519895 | .1834000 | .4337853 |
| 1.519 | .4513586 | .1828730 | .4340234 |
| 1.520 | .4507270 | .1823468 | .4342607 |
| 1.521 | .4500949 | .1818213 | .4344974 |
| 1.522 | .4494619 | .1812965 | .4347334 |
| 1.523 | .4488283 | .1807725 | .4349688 |
| 1.524 | .4481941 | .1802493 | .4352034 |
| 1.525 | .4475591 | .1797268 | .4354375 |
| 1.526 | .4469235 | .1792050 | .4356708 |
| 1.527 | .4462872 | .1786840 | .4359035 |
| 1.528 | .4456502 | .1781636 | .4361356 |
| 1.529 | .4450126 | .1776441 | .4363670 |
| 1.530 | .4443744 | .1771253 | .4365976 |
| 1.531 | .4437354 | .1766072 | .4368277 |
| 1.532 | .4430958 | .1760899 | .4370571 |
| 1.533 | .4424556 | .1755734 | .4372858 |
| 1.534 | .4418147 | .1750575 | .4375139 |
| 1.535 | .4411732 | .1745424 | .4377413 |
| 1.536 | .4405311 | .1740281 | .4379680 |
| 1.537 | .4398882 | .1735145 | .4381941 |
| 1.538 | .4392447 | .1730017 | .4384195 |
| 1.539 | .4386007 | .1724896 | .4386443 |
| 1.540 | .4379559 | .1719783 | .4388684 |
| 1.541 | .4373106 | .1714677 | .4390919 |
| 1.542 | .4366647 | .1709579 | .4393146 |
| 1.543 | .4360181 | .1704488 | .4395368 |
| 1.544 | .4353709 | .1699405 | .4397582 |
| 1.545 | .4347231 | .1694330 | .4399790 |
| 1.546 | .4340747 | .1689262 | .4401992 |
| 1.547 | .4334256 | .1684201 | .4404187 |
| 1.548 | .4327760 | .1679149 | .4406375 |
| 1.549 | .4321257 | .1674103 | .4408557 |
| 1.550 | .4314749 | .1669065 | .4410732 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.551 | 0.4308235 | 0.1664036 | 0.4412901 |
| 1.552 | .4301714 | .1659013 | .4415063 |
| 1.553 | .4295188 | .1653998 | .4417219 |
| 1.554 | .4288656 | .1648991 | .4419368 |
| 1.555 | .4282118 | .1643991 | .4421511 |
| 1.556 | .4275574 | .1638999 | .4423647 |
| 1.557 | .4269025 | .1634015 | .4425776 |
| 1.558 | .4262469 | .1629038 | .4427899 |
| 1.559 | .4255907 | .1624069 | .4430015 |
| 1.560 | .4249341 | .1619108 | .4432125 |
| 1.561 | .4242768 | .1614154 | .4434229 |
| 1.562 | .4236190 | .1609208 | .4436326 |
| 1.563 | .4229607 | .1604270 | .4438416 |
| 1.564 | .42223017 | .1599339 | .4440500 |
| 1.565 | .4216422 | .1594416 | .4442577 |
| 1.566 | .4209822 | .1589501 | .4444648 |
| 1.567 | .4203215 | .1584593 | .4446712 |
| 1.568 | .4196604 | .1579693 | .4448770 |
| 1.569 | .4189988 | .1574801 | .4450822 |
| 1.570 | .4183364 | .1569916 | .4452867 |
| 1.571 | .4176737 | .1565040 | .4454905 |
| 1.572 | .4170105 | .1560171 | .4456937 |
| 1.573 | .4163466 | .1555309 | .4458963 |
| 1.574 | .4156822 | .1550456 | .4460982 |
| 1.575 | .4150174 | .1545610 | .4462994 |
| 1.576 | .4143519 | .1540772 | .4465001 |
| 1.577 | .4136860 | .1535942 | .4467001 |
| 1.578 | .4130196 | .1531120 | .4468994 |
| 1.579 | .4123526 | .1526305 | .4470981 |
| 1.580 | .4116851 | .1521498 | .4472961 |
| 1.581 | .4110172 | .1516699 | .4474935 |
| 1.582 | .4103487 | .1511907 | .4476903 |
| 1.583 | .4096797 | .1507124 | .4478865 |
| 1.584 | .4090103 | .1502349 | .4480819 |
| 1.585 | .4083403 | .1497581 | .4482768 |
| 1.586 | .4076698 | .1492820 | .4484710 |
| 1.587 | .4069990 | .1488069 | .4486646 |
| 1.588 | .4063274 | .1483324 | .4488575 |
| 1.589 | .4056555 | .1478587 | .4490498 |
| 1.590 | .4049832 | .1473859 | .4492415 |
| 1.591 | .4043103 | .1469138 | .4494325 |
| 1.592 | .4036369 | .1464424 | .4496229 |
| 1.593 | .4029632 | .1459720 | .4498127 |
| 1.594 | .4022888 | .1455022 | .4500018 |
| 1.595 | .4016141 | .1450333 | .4501903 |
| 1.596 | .4009390 | .1445651 | .4503781 |
| 1.597 | .4002633 | .1440977 | .4505654 |
| 1.598 | .3995872 | .1436312 | .4507520 |
| 1.599 | .3989107 | .1431654 | .4509379 |
| 1.600 | .3982336 | .1427004 | .4511233 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | ρ/ρ' | A |
|------------|-----------------------|--------------|-----------|
| 1.601 | 0.3975562 | 0.1422362 | 0.4513080 |
| 1.602 | .3968783 | .1417728 | .4514920 |
| 1.603 | .3961999 | .1413101 | .4516755 |
| 1.604 | .3955212 | .1408483 | .4518583 |
| 1.605 | .3948420 | .1403873 | .4520405 |
| 1.606 | .3941624 | .1399270 | .4522221 |
| 1.607 | .3934823 | .1394675 | .4524030 |
| 1.608 | .3928019 | .1390089 | .4525833 |
| 1.609 | .3921209 | .1385510 | .4527631 |
| 1.610 | .3914396 | .1380939 | .4529421 |
| 1.611 | .3907580 | .1376376 | .4531206 |
| 1.612 | .3900758 | .1371821 | .4532984 |
| 1.613 | .3893933 | .1367274 | .4534756 |
| 1.614 | .3887104 | .1362736 | .4536522 |
| 1.615 | .3880270 | .1358204 | .4538282 |
| 1.616 | .3873432 | .1353682 | .4540035 |
| 1.617 | .3866592 | .1349167 | .4541782 |
| 1.618 | .3859746 | .1344660 | .4543524 |
| 1.619 | .3852897 | .1340160 | .4545259 |
| 1.620 | .3846045 | .1335670 | .4546987 |
| 1.621 | .3839187 | .1331186 | .4548710 |
| 1.622 | .3832327 | .1326711 | .4550427 |
| 1.623 | .3825463 | .1322244 | .4552137 |
| 1.624 | .3818595 | .1317785 | .4553841 |
| 1.625 | .3811723 | .1313334 | .4555539 |
| 1.626 | .3804849 | .1308891 | .4557231 |
| 1.627 | .3797969 | .1304456 | .4558917 |
| 1.628 | .3791087 | .1300029 | .4560597 |
| 1.629 | .3784202 | .1295611 | .4562271 |
| 1.630 | .3777312 | .1291199 | .4563938 |
| 1.631 | .3770419 | .1286797 | .4565600 |
| 1.632 | .3763523 | .1282402 | .4567255 |
| 1.633 | .3756623 | .1278015 | .4568905 |
| 1.634 | .3749720 | .1273636 | .4570548 |
| 1.635 | .3742814 | .1269266 | .4572186 |
| 1.636 | .3735903 | .1264903 | .4573817 |
| 1.637 | .3728990 | .1260549 | .4575442 |
| 1.638 | .3722074 | .1256202 | .4577062 |
| 1.639 | .3715154 | .1251864 | .4578675 |
| 1.640 | .3708231 | .1247533 | .4580282 |
| 1.641 | .3701306 | .1243212 | .4581883 |
| 1.642 | .3694377 | .1238897 | .4583479 |
| 1.643 | .3687444 | .1234591 | .4585068 |
| 1.644 | .3680510 | .1230293 | .4586651 |
| 1.645 | .3673571 | .1226003 | .4588229 |
| 1.646 | .3666630 | .1221721 | .4589800 |
| 1.647 | .3659686 | .1217448 | .4591366 |
| 1.648 | .3652739 | .1213182 | .4592925 |
| 1.649 | .3645789 | .1208925 | .4594479 |
| 1.650 | .3638837 | .1204676 | .4596027 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.651 | 0.3631881 | 0.1200434 | 0.4597569 |
| 1.652 | .3624922 | .1196201 | .4599105 |
| 1.653 | .3617962 | .1191976 | .4600635 |
| 1.654 | .3610997 | .1187759 | .4602159 |
| 1.655 | .3604030 | .1183550 | .4603677 |
| 1.656 | .3597062 | .1179350 | .4605190 |
| 1.657 | .3590090 | .1175157 | .4606697 |
| 1.658 | .3583115 | .1170973 | .4608197 |
| 1.659 | .3576139 | .1166797 | .4609692 |
| 1.660 | .3569159 | .1162628 | .4611181 |
| 1.661 | .3562177 | .1158468 | .4612665 |
| 1.662 | .3555193 | .1154317 | .4614142 |
| 1.663 | .3548206 | .1150173 | .4615614 |
| 1.664 | .3541216 | .1146037 | .4617080 |
| 1.665 | .3534225 | .1141910 | .4618540 |
| 1.666 | .3527231 | .1137791 | .4619994 |
| 1.667 | .3520235 | .1133680 | .4621443 |
| 1.668 | .3513237 | .1129577 | .4622886 |
| 1.669 | .3506236 | .1125482 | .4624323 |
| 1.670 | .3499233 | .1121396 | .4625754 |
| 1.671 | .3492228 | .1117318 | .4627180 |
| 1.672 | .3485221 | .1113247 | .4628600 |
| 1.673 | .3478212 | .1109185 | .4630014 |
| 1.674 | .3471201 | .1105132 | .4631423 |
| 1.675 | .3464187 | .1101086 | .4632826 |
| 1.676 | .3457172 | .1097048 | .4634223 |
| 1.677 | .3450156 | .1093019 | .4635615 |
| 1.678 | .3443136 | .1088998 | .4637001 |
| 1.679 | .3436115 | .1084985 | .4638381 |
| 1.680 | .3429093 | .1080981 | .4639755 |
| 1.681 | .3422068 | .1076984 | .4641125 |
| 1.682 | .3415041 | .1072996 | .4642488 |
| 1.683 | .3408014 | .1069016 | .4643846 |
| 1.684 | .3400983 | .1065044 | .4645198 |
| 1.685 | .3393952 | .1061080 | .4646545 |
| 1.686 | .3386919 | .1057125 | .4647886 |
| 1.687 | .3379884 | .1053177 | .4649221 |
| 1.688 | .3372848 | .1049238 | .4650551 |
| 1.689 | .3365810 | .1045307 | .4651876 |
| 1.690 | .3358770 | .1041384 | .4653195 |
| 1.691 | .3351729 | .1037470 | .4654508 |
| 1.692 | .3344688 | .1033564 | .4655816 |
| 1.693 | .3337644 | .1029666 | .4657118 |
| 1.694 | .3330599 | .1025776 | .4658415 |
| 1.695 | .3323553 | .1021894 | .4659707 |
| 1.696 | .3316505 | .1018021 | .4660993 |
| 1.697 | .3309456 | .1014156 | .4662273 |
| 1.698 | .3302406 | .1010299 | .4663548 |
| 1.699 | .3295354 | .1006450 | .4664818 |
| 1.700 | .3288302 | .1002610 | .4666082 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| v/v_{cr} | $\rho v / \rho' v_{cr}$ | p/p' | A |
|------------|-------------------------|----------|----------|
| 1.701 | .3281249 | .0998778 | .4667341 |
| 1.702 | .3274194 | .0994953 | .4668594 |
| 1.703 | .3267138 | .0991138 | .4669842 |
| 1.704 | .3260082 | .0987330 | .4671085 |
| 1.705 | .3253024 | .0983531 | .4672322 |
| 1.706 | .3245965 | .0979740 | .4673554 |
| 1.707 | .3238906 | .0975957 | .4674781 |
| 1.708 | .3231845 | .0972182 | .4676002 |
| 1.709 | .3224783 | .0968416 | .4677218 |
| 1.710 | .3217722 | .0964658 | .4678428 |
| 1.711 | .3210659 | .0960908 | .4679634 |
| 1.712 | .3203595 | .0957166 | .4680834 |
| 1.713 | .3196531 | .0953433 | .4682028 |
| 1.714 | .3189465 | .0949708 | .4683218 |
| 1.715 | .3182400 | .0945991 | .4684402 |
| 1.716 | .3175334 | .0942282 | .4685581 |
| 1.717 | .3168267 | .0938582 | .4686755 |
| 1.718 | .3161199 | .0934889 | .4687923 |
| 1.719 | .3154132 | .0931206 | .4689087 |
| 1.720 | .3147064 | .0927530 | .4690245 |
| 1.721 | .3139995 | .0923862 | .4691398 |
| 1.722 | .3132926 | .0920203 | .4692545 |
| 1.723 | .3125856 | .0916552 | .4693688 |
| 1.724 | .3118787 | .0912910 | .4694825 |
| 1.725 | .3111717 | .0909275 | .4695957 |
| 1.726 | .3104646 | .0905649 | .4697085 |
| 1.727 | .3097576 | .0902031 | .4698207 |
| 1.728 | .3090505 | .0898421 | .4699323 |
| 1.729 | .3083434 | .0894820 | .4700435 |
| 1.730 | .3076363 | .0891226 | .4701542 |
| 1.731 | .3069293 | .0887642 | .4702643 |
| 1.732 | .30622281 | .0884065 | .4703740 |
| 1.733 | .3055150 | .0880496 | .4704831 |
| 1.734 | .3048079 | .0876936 | .4705918 |
| 1.735 | .3041008 | .0873384 | .4706999 |
| 1.736 | .3033937 | .0869840 | .4708076 |
| 1.737 | .3026867 | .0866305 | .4709147 |
| 1.738 | .3019796 | .0862778 | .4710213 |
| 1.739 | .3012726 | .0859259 | .4711275 |
| 1.740 | .3005656 | .0855748 | .4712331 |
| 1.741 | .2998585 | .0852246 | .4713383 |
| 1.742 | .2991516 | .0848751 | .4714429 |
| 1.743 | .2984447 | .0845265 | .4715471 |
| 1.744 | .2977378 | .0841788 | .4716508 |
| 1.745 | .2970310 | .0838318 | .4717539 |
| 1.746 | .2963242 | .0834857 | .4718566 |
| 1.747 | .2956175 | .0831404 | .4719588 |
| 1.748 | .2949108 | .0827959 | .4720605 |
| 1.749 | .2942042 | .0824523 | .4721618 |
| 1.750 | .2934976 | .0821094 | .4722625 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.751 | 0.2927911 | 0.0817674 | 0.4723628 |
| 1.752 | .2920847 | .0814263 | .4724625 |
| 1.753 | .2913783 | .0810859 | .4725618 |
| 1.754 | .2906720 | .0807464 | .4726606 |
| 1.755 | .2899658 | .0804077 | .4727590 |
| 1.756 | .2892596 | .0800698 | .4728568 |
| 1.757 | .2885536 | .0797327 | .4729542 |
| 1.758 | .2878477 | .0793965 | .4730511 |
| 1.759 | .2871418 | .0790611 | .4731475 |
| 1.760 | .2864360 | .0787265 | .4732435 |
| 1.761 | .2857304 | .0783928 | .4733390 |
| 1.762 | .2850248 | .0780598 | .4734340 |
| 1.763 | .2843193 | .0777277 | .4735285 |
| 1.764 | .2836140 | .0773964 | .4736226 |
| 1.765 | .2829087 | .0770659 | .4737162 |
| 1.766 | .2822036 | .0767363 | .4738094 |
| 1.767 | .2814987 | .0764075 | .4739020 |
| 1.768 | .2807938 | .0760794 | .4739942 |
| 1.769 | .2800890 | .0757523 | .4740860 |
| 1.770 | .2793845 | .0754259 | .4741773 |
| 1.771 | .2786799 | .0751004 | .4742681 |
| 1.772 | .2779756 | .0747756 | .4743585 |
| 1.773 | .2772715 | .0744518 | .4744484 |
| 1.774 | .2765674 | .0741287 | .4745379 |
| 1.775 | .2758635 | .0738064 | .4746269 |
| 1.776 | .2751598 | .0734850 | .4747155 |
| 1.777 | .2744561 | .0731644 | .4748036 |
| 1.778 | .2737527 | .0728446 | .4748912 |
| 1.779 | .2730495 | .0725256 | .4749784 |
| 1.780 | .2723463 | .0722075 | .4750652 |
| 1.781 | .2716434 | .0718902 | .4751515 |
| 1.782 | .2709407 | .0715737 | .4752374 |
| 1.783 | .2702381 | .0712580 | .4753228 |
| 1.784 | .2695357 | .0709431 | .4754078 |
| 1.785 | .2688336 | .0706291 | .4754923 |
| 1.786 | .2681315 | .0703158 | .4755764 |
| 1.787 | .2674297 | .0700034 | .4756601 |
| 1.788 | .2667281 | .0696918 | .4757433 |
| 1.789 | .2660267 | .0693810 | .4758261 |
| 1.790 | .2653255 | .0690711 | .4759084 |
| 1.791 | .2646245 | .0687620 | .4759903 |
| 1.792 | .2639236 | .0684536 | .4760718 |
| 1.793 | .2632231 | .0681461 | .4761529 |
| 1.794 | .2625228 | .0678394 | .4762335 |
| 1.795 | .2618226 | .0675336 | .4763137 |
| 1.796 | .2611227 | .0672285 | .4763934 |
| 1.797 | .2604230 | .0669243 | .4764728 |
| 1.798 | .2597235 | .0666209 | .4765517 |
| 1.799 | .2590243 | .0663183 | .4766302 |
| 1.800 | .2583254 | .0660165 | .4767082 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.801 | 0.2576266 | 0.0657155 | 0.4767859 |
| 1.802 | .2569281 | .0654153 | .4768631 |
| 1.803 | .2562299 | .0651160 | .4769399 |
| 1.804 | .2555319 | .0648175 | .4770163 |
| 1.805 | .2548342 | .0645198 | .4770923 |
| 1.806 | .2541368 | .0642229 | .4771678 |
| 1.807 | .2534396 | .0639268 | .4772430 |
| 1.808 | .2527426 | .0636315 | .4773177 |
| 1.809 | .2520461 | .0633371 | .4773920 |
| 1.810 | .2513496 | .0630434 | .4774659 |
| 1.811 | .2506535 | .0627506 | .4775394 |
| 1.812 | .2499578 | .0624585 | .4776125 |
| 1.813 | .2492622 | .0621673 | .4776852 |
| 1.814 | .2485670 | .0618769 | .4777575 |
| 1.815 | .2478721 | .0615873 | .4778294 |
| 1.816 | .2471775 | .0612986 | .4779008 |
| 1.817 | .2464831 | .0610106 | .4779719 |
| 1.818 | .2457892 | .0607234 | .4780426 |
| 1.819 | .2450954 | .0604371 | .4781129 |
| 1.820 | .2444020 | .0601515 | .4781828 |
| 1.821 | .2437090 | .0598668 | .4782523 |
| 1.822 | .2430162 | .0595829 | .4783214 |
| 1.823 | .2423237 | .0592998 | .4783901 |
| 1.824 | .2416317 | .0590175 | .4784584 |
| 1.825 | .2409398 | .0587360 | .4785263 |
| 1.826 | .2402484 | .0584553 | .4785938 |
| 1.827 | .2395574 | .0581754 | .4786610 |
| 1.828 | .2388666 | .0578963 | .4787277 |
| 1.829 | .2381761 | .0576180 | .4787941 |
| 1.830 | .2374861 | .0573406 | .4788601 |
| 1.831 | .2367964 | .0570639 | .4789257 |
| 1.832 | .2361070 | .0567880 | .4789910 |
| 1.833 | .2354181 | .0565130 | .4790558 |
| 1.834 | .2347294 | .0562387 | .4791203 |
| 1.835 | .2340412 | .0559653 | .4791844 |
| 1.836 | .2333533 | .0556926 | .4792481 |
| 1.837 | .2326658 | .0554208 | .4793114 |
| 1.838 | .2319786 | .0551497 | .4793744 |
| 1.839 | .2312919 | .0548795 | .4794370 |
| 1.840 | .2306055 | .0546101 | .4794992 |
| 1.841 | .2299196 | .0543414 | .4795611 |
| 1.842 | .2292340 | .0540736 | .4796226 |
| 1.843 | .2285488 | .0538065 | .4796837 |
| 1.844 | .2278640 | .0535403 | .4797444 |
| 1.845 | .2271797 | .0532749 | .4798048 |
| 1.846 | .2264957 | .0530102 | .4798649 |
| 1.847 | .2258121 | .0527464 | .4799245 |
| 1.848 | .2251290 | .0524833 | .4799838 |
| 1.849 | .2244463 | .0522211 | .4800428 |
| 1.850 | .2237640 | .0519596 | .4801014 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.851 | 0.2230822 | 0.0516990 | 0.4801596 |
| 1.852 | .2224007 | .0514391 | .4802175 |
| 1.853 | .2217197 | .0511800 | .4802750 |
| 1.854 | .2210392 | .0509218 | .4803322 |
| 1.855 | .2203590 | .0506643 | .4803890 |
| 1.856 | .2196793 | .0504076 | .4804455 |
| 1.857 | .2190001 | .0501517 | .4805016 |
| 1.858 | .2183213 | .0498966 | .4805574 |
| 1.859 | .2176430 | .0496423 | .4806129 |
| 1.860 | .2169652 | .0493887 | .4806679 |
| 1.861 | .2162878 | .0491360 | .4807227 |
| 1.862 | .2156108 | .0488841 | .4807771 |
| 1.863 | .2149344 | .0486329 | .4808312 |
| 1.864 | .2142584 | .0483825 | .4808849 |
| 1.865 | .2135829 | .0481330 | .4809383 |
| 1.866 | .2129079 | .0478842 | .4809913 |
| 1.867 | .2122333 | .0476362 | .4810441 |
| 1.868 | .2115593 | .0473890 | .4810964 |
| 1.869 | .2108858 | .0471426 | .4811485 |
| 1.870 | .2102127 | .0468969 | .4812002 |
| 1.871 | .2095401 | .0466521 | .4812516 |
| 1.872 | .2088681 | .0464080 | .4813027 |
| 1.873 | .2081965 | .0461647 | .4813534 |
| 1.874 | .2075255 | .0459228 | .4814038 |
| 1.875 | .2068550 | .0456805 | .4814539 |
| 1.876 | .2061850 | .0454395 | .4815036 |
| 1.877 | .2055155 | .0451994 | .4815531 |
| 1.878 | .2048466 | .0449600 | .4816022 |
| 1.879 | .2041781 | .0447214 | .4816510 |
| 1.880 | .2035102 | .0444836 | .4816995 |
| 1.881 | .2028429 | .0442465 | .4817476 |
| 1.882 | .2021760 | .0440103 | .4817955 |
| 1.883 | .2015098 | .0437748 | .4818430 |
| 1.884 | .2008441 | .0435401 | .4818902 |
| 1.885 | .2001789 | .0433062 | .4819371 |
| 1.886 | .1995142 | .0430730 | .4819837 |
| 1.887 | .1988502 | .0428406 | .4820300 |
| 1.888 | .1981867 | .0426090 | .4820760 |
| 1.889 | .1975238 | .0423782 | .4821217 |
| 1.890 | .1968614 | .0421481 | .4821670 |
| 1.891 | .1961996 | .0419188 | .4822121 |
| 1.892 | .1955384 | .0416903 | .4822569 |
| 1.893 | .1948778 | .0414626 | .4823013 |
| 1.894 | .1942177 | .0412356 | .4823455 |
| 1.895 | .1935583 | .0410094 | .4823893 |
| 1.896 | .1928994 | .0407840 | .4824329 |
| 1.897 | .1922411 | .0405593 | .4824762 |
| 1.898 | .1915835 | .0403354 | .4825191 |
| 1.899 | .1909264 | .0401123 | .4825618 |
| 1.900 | .1902699 | .0398899 | .4826042 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.901 | 0.1896141 | 0.0396683 | 0.4826463 |
| 1.902 | .1889589 | .0394475 | .4826881 |
| 1.903 | .1883042 | .0392274 | .4827296 |
| 1.904 | .1876502 | .0390081 | .4827708 |
| 1.905 | .1869969 | .0387896 | .4828117 |
| 1.906 | .1863441 | .0385718 | .4828524 |
| 1.907 | .1856919 | .0383548 | .4828928 |
| 1.908 | .1850405 | .0381385 | .4829329 |
| 1.909 | .1843896 | .0379230 | .4829727 |
| 1.910 | .1837394 | .0377083 | .4830122 |
| 1.911 | .1830899 | .0374943 | .4830514 |
| 1.912 | .1824409 | .0372810 | .4830904 |
| 1.913 | .1817927 | .0370686 | .4831291 |
| 1.914 | .1811451 | .0368569 | .4831675 |
| 1.915 | .1804981 | .0366459 | .4832057 |
| 1.916 | .1798519 | .0364357 | .4832435 |
| 1.917 | .1792063 | .0362263 | .4832811 |
| 1.918 | .1785613 | .0360176 | .4833185 |
| 1.919 | .1779170 | .0358096 | .4833555 |
| 1.920 | .1772735 | .0356024 | .4833923 |
| 1.921 | .1766306 | .0353960 | .4834289 |
| 1.922 | .1759883 | .0351903 | .4834651 |
| 1.923 | .1753468 | .0349853 | .4835011 |
| 1.924 | .1747060 | .0347811 | .4835369 |
| 1.925 | .1740658 | .0345777 | .4835723 |
| 1.926 | .1734264 | .0343750 | .4836076 |
| 1.927 | .1727877 | .0341730 | .4836425 |
| 1.928 | .1721496 | .0339718 | .4836772 |
| 1.929 | .1715123 | .0337713 | .4837117 |
| 1.930 | .1708757 | .0335716 | .4837459 |
| 1.931 | .1702398 | .0333726 | .4837798 |
| 1.932 | .1696047 | .0331744 | .4838135 |
| 1.933 | .1689702 | .0329769 | .4838469 |
| 1.934 | .1683365 | .0327801 | .4838801 |
| 1.935 | .1677036 | .0325841 | .4839130 |
| 1.936 | .1670713 | .0323888 | .4839457 |
| 1.937 | .1664398 | .0321943 | .4839782 |
| 1.938 | .1658091 | .0320005 | .4840103 |
| 1.939 | .1651790 | .0318074 | .4840423 |
| 1.940 | .1645498 | .0316150 | .4840740 |
| 1.941 | .1639213 | .0314234 | .4841055 |
| 1.942 | .1632935 | .0312326 | .4841367 |
| 1.943 | .1626665 | .0310424 | .4841677 |
| 1.944 | .1620403 | .0308530 | .4841984 |
| 1.945 | .1614148 | .0306643 | .4842290 |
| 1.946 | .1607901 | .0304764 | .4842592 |
| 1.947 | .1601663 | .0302891 | .4842893 |
| 1.948 | .1595431 | .0301026 | .4843191 |
| 1.949 | .1589207 | .0299169 | .4843487 |
| 1.950 | .1582992 | .0297318 | .4843780 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.951 | 0.1576784 | 0.0295475 | 0.4844071 |
| 1.952 | .1570584 | .0293639 | .4844360 |
| 1.953 | .1564392 | .0291810 | .4844647 |
| 1.954 | .1558208 | .0289989 | .4844931 |
| 1.955 | .1552032 | .0288175 | .4845213 |
| 1.956 | .1545865 | .0286368 | .4845493 |
| 1.957 | .1539705 | .0284568 | .4845771 |
| 1.958 | .1533553 | .0282775 | .4846047 |
| 1.959 | .1527410 | .0280989 | .4846320 |
| 1.960 | .1521275 | .0279211 | .4846591 |
| 1.961 | .1515148 | .0277440 | .4846860 |
| 1.962 | .1509029 | .0275676 | .4847127 |
| 1.963 | .1502919 | .0273919 | .4847391 |
| 1.964 | .1496817 | .0272169 | .4847654 |
| 1.965 | .1490724 | .0270426 | .4847914 |
| 1.966 | .1484638 | .0268690 | .4848172 |
| 1.967 | .1478562 | .0266962 | .4848428 |
| 1.968 | .1472494 | .0265240 | .4848682 |
| 1.969 | .1466434 | .0263526 | .4848934 |
| 1.970 | .1460383 | .0261819 | .4849184 |
| 1.971 | .1454340 | .0260118 | .4849432 |
| 1.972 | .1448306 | .0258425 | .4849678 |
| 1.973 | .1442281 | .0256739 | .4849921 |
| 1.974 | .1436265 | .0255060 | .4850163 |
| 1.975 | .1430256 | .0253388 | .4850403 |
| 1.976 | .1424258 | .0251723 | .4850640 |
| 1.977 | .1418268 | .0250065 | .4850876 |
| 1.978 | .1412286 | .0248413 | .4851110 |
| 1.979 | .1406313 | .0246769 | .4851341 |
| 1.980 | .1400350 | .0245132 | .4851571 |
| 1.981 | .1394395 | .0243502 | .4851799 |
| 1.982 | .1388449 | .0241878 | .4852025 |
| 1.983 | .1382513 | .0240262 | .4852249 |
| 1.984 | .1376585 | .0238652 | .4852471 |
| 1.985 | .1370666 | .0237050 | .4852691 |
| 1.986 | .1364757 | .0235454 | .4852909 |
| 1.987 | .1358857 | .0233865 | .4853125 |
| 1.988 | .1352965 | .0232284 | .4853340 |
| 1.989 | .1347084 | .0230709 | .4853553 |
| 1.990 | .1341211 | .0229140 | .4853763 |
| 1.991 | .1335347 | .0227579 | .4853972 |
| 1.992 | .1329494 | .0226025 | .4854179 |
| 1.993 | .1323649 | .0224477 | .4854385 |
| 1.994 | .1317813 | .0222936 | .4854588 |
| 1.995 | .1311988 | .0221402 | .4854790 |
| 1.996 | .1306171 | .0219875 | .4854990 |
| 1.997 | .1300364 | .0218354 | .4855188 |
| 1.998 | .1294567 | .0216841 | .4855384 |
| 1.999 | .1288779 | .0215334 | .4855579 |
| 2.000 | .1283000 | .0213833 | .4855772 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.001 | 0.1277232 | 0.0212340 | 0.4855963 |
| 2.002 | .1271473 | .0210853 | .4856153 |
| 2.003 | .1265723 | .0209373 | .4856341 |
| 2.004 | .1259984 | .0207900 | .4856527 |
| 2.005 | .1254254 | .0206433 | .4856711 |
| 2.006 | .1248534 | .0204973 | .4856894 |
| 2.007 | .1242824 | .0203520 | .4857075 |
| 2.008 | .1237123 | .0202073 | .4857254 |
| 2.009 | .1231433 | .0200633 | .4857432 |
| 2.010 | .1225752 | .0199200 | .4857608 |
| 2.011 | .1220081 | .0197773 | .4857782 |
| 2.012 | .1214421 | .0196353 | .4857955 |
| 2.013 | .1208771 | .0194940 | .4858126 |
| 2.014 | .1203130 | .0193533 | .4858296 |
| 2.015 | .1197499 | .0192132 | .4858464 |
| 2.016 | .1191879 | .0190739 | .4858631 |
| 2.017 | .1186269 | .0189351 | .4858796 |
| 2.018 | .1180669 | .0187970 | .4858959 |
| 2.019 | .1175079 | .0186596 | .4859121 |
| 2.020 | .1169499 | .0185229 | .4859281 |
| 2.021 | .1163930 | .0183867 | .4859440 |
| 2.022 | .1158372 | .0182513 | .4859597 |
| 2.023 | .1152823 | .0181165 | .4859753 |
| 2.024 | .1147285 | .0179823 | .4859908 |
| 2.025 | .1141757 | .0178488 | .4860060 |
| 2.026 | .1136239 | .0177159 | .4860212 |
| 2.027 | .1130733 | .0175836 | .4860362 |
| 2.028 | .1125237 | .0174520 | .4860510 |
| 2.029 | .1119751 | .0173211 | .4860657 |
| 2.030 | .1114276 | .0171908 | .4860803 |
| 2.031 | .1108811 | .0170611 | .4860947 |
| 2.032 | .1103357 | .0169320 | .4861089 |
| 2.033 | .1097914 | .0168036 | .4861231 |
| 2.034 | .1092481 | .0166759 | .4861371 |
| 2.035 | .1087059 | .0165487 | .4861509 |
| 2.036 | .1081648 | .0164222 | .4861646 |
| 2.037 | .1076248 | .0162963 | .4861782 |
| 2.038 | .1070859 | .0161711 | .4861917 |
| 2.039 | .1065480 | .0160465 | .4862050 |
| 2.040 | .1060113 | .0159225 | .4862182 |
| 2.041 | .1054756 | .0157991 | .4862312 |
| 2.042 | .1049410 | .0156764 | .4862441 |
| 2.043 | .1044076 | .0155542 | .4862569 |
| 2.044 | .1038752 | .0154327 | .4862696 |
| 2.045 | .1033439 | .0153119 | .4862821 |
| 2.046 | .1028138 | .0151916 | .4862945 |
| 2.047 | .1022847 | .0150720 | .4863067 |
| 2.048 | .1017568 | .0149529 | .4863189 |
| 2.049 | .1012300 | .0148345 | .4863309 |
| 2.050 | .1007043 | .0147167 | .4863428 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.051 | 0.1001797 | 0.0145996 | 0.4863546 |
| 2.052 | 0.0996563 | .0144830 | .4863662 |
| 2.053 | 0.0991339 | .0143670 | .4863777 |
| 2.054 | 0.0986128 | .0142517 | .4863892 |
| 2.055 | 0.0980928 | .0141369 | .4864004 |
| 2.056 | 0.0975738 | .0140828 | .4864116 |
| 2.057 | 0.0970561 | .0139093 | .4864227 |
| 2.058 | 0.0965395 | .0137963 | .4864336 |
| 2.059 | 0.0960240 | .0136840 | .4864444 |
| 2.060 | 0.0955097 | .0135723 | .4864551 |
| 2.061 | 0.0949966 | .0134611 | .4864657 |
| 2.062 | 0.0944846 | .0133506 | .4864762 |
| 2.063 | 0.0939737 | .0132407 | .4864865 |
| 2.064 | 0.0934641 | .0131313 | .4864968 |
| 2.065 | 0.0929556 | .0130286 | .4865069 |
| 2.066 | 0.0924482 | .0129144 | .4865169 |
| 2.067 | 0.0919421 | .0128069 | .4865269 |
| 2.068 | 0.0914371 | .0126999 | .4865367 |
| 2.069 | 0.0909333 | .0125935 | .4865464 |
| 2.070 | 0.0904307 | .0124877 | .4865560 |
| 2.071 | 0.0899292 | .0123825 | .4865654 |
| 2.072 | 0.0894290 | .0122779 | .4865748 |
| 2.073 | 0.0889299 | .0121739 | .4865841 |
| 2.074 | 0.0884321 | .0120704 | .4865933 |
| 2.075 | 0.0879354 | .0119675 | .4866024 |
| 2.076 | 0.0874399 | .0118652 | .4866113 |
| 2.077 | 0.0869457 | .0117635 | .4866202 |
| 2.078 | 0.0864526 | .0116623 | .4866290 |
| 2.079 | 0.0859608 | .0115618 | .4866376 |
| 2.080 | 0.0854701 | .0114618 | .4866462 |
| 2.081 | 0.0849807 | .0113623 | .4866547 |
| 2.082 | 0.0844925 | .0112635 | .4866631 |
| 2.083 | 0.0840055 | .0111652 | .4866713 |
| 2.084 | 0.0835197 | .0110675 | .4866795 |
| 2.085 | 0.0830352 | .0109703 | .4866876 |
| 2.086 | 0.0825519 | .0108737 | .4866956 |
| 2.087 | 0.0820698 | .0107777 | .4867035 |
| 2.088 | 0.0815890 | .0106822 | .4867113 |
| 2.089 | 0.0811094 | .0105873 | .4867190 |
| 2.090 | 0.0806310 | .0104930 | .4867267 |
| 2.091 | 0.0801539 | .0103992 | .4867342 |
| 2.092 | 0.0796780 | .0103059 | .4867417 |
| 2.093 | 0.0792033 | .0102133 | .4867490 |
| 2.094 | 0.0787300 | .0101211 | .4867563 |
| 2.095 | 0.0782578 | .0100295 | .4867635 |
| 2.096 | 0.0777870 | .0099385 | .4867706 |
| 2.097 | 0.0773174 | .0098480 | .4867776 |
| 2.098 | 0.0768490 | .0097581 | .4867845 |
| 2.099 | 0.0763819 | .0096687 | .4867914 |
| 2.100 | 0.0759161 | .0095799 | .4867981 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.101 | 0.0754515 | 0.0094916 | 0.4868048 |
| 2.102 | .0749883 | .0094038 | .4868114 |
| 2.103 | .0745263 | .0093166 | .4868179 |
| 2.104 | .0740656 | .0092299 | .4868244 |
| 2.105 | .0736061 | .0091438 | .4868307 |
| 2.106 | .0731480 | .0090582 | .4868370 |
| 2.107 | .0726911 | .0089731 | .4868432 |
| 2.108 | .0722355 | .0088886 | .4868494 |
| 2.109 | .0717812 | .0088046 | .4868554 |
| 2.110 | .0713282 | .0087211 | .4868614 |
| 2.111 | .0708765 | .0086381 | .4868673 |
| 2.112 | .0704262 | .0085557 | .4868731 |
| 2.113 | .0699770 | .0084738 | .4868788 |
| 2.114 | .0695292 | .0083924 | .4868845 |
| 2.115 | .0690828 | .0083116 | .4868901 |
| 2.116 | .0686376 | .0082312 | .4868957 |
| 2.117 | .0681937 | .0081514 | .4869011 |
| 2.118 | .0677512 | .0080721 | .4869065 |
| 2.119 | .0673100 | .0079933 | .4869118 |
| 2.120 | .0668700 | .0079151 | .4869171 |
| 2.121 | .0664315 | .0078373 | .4869223 |
| 2.122 | .0659942 | .0077601 | .4869274 |
| 2.123 | .0655583 | .0076833 | .4869324 |
| 2.124 | .0651237 | .0076071 | .4869374 |
| 2.125 | .0646904 | .0075314 | .4869423 |
| 2.126 | .0642585 | .0074561 | .4869472 |
| 2.127 | .0638279 | .0073814 | .4869520 |
| 2.128 | .0633986 | .0073072 | .4869567 |
| 2.129 | .0629707 | .0072335 | .4869613 |
| 2.130 | .0625441 | .0071603 | .4869659 |
| 2.131 | .0621189 | .0070876 | .4869705 |
| 2.132 | .0616950 | .0070153 | .4869749 |
| 2.133 | .0612725 | .0069436 | .4869793 |
| 2.134 | .0608513 | .0068724 | .4869837 |
| 2.135 | .0604315 | .0068016 | .4869880 |
| 2.136 | .0600131 | .0067314 | .4869922 |
| 2.137 | .0595959 | .0066616 | .4869964 |
| 2.138 | .0591802 | .0065923 | .4870005 |
| 2.139 | .0587659 | .0065235 | .4870045 |
| 2.140 | .0583529 | .0064552 | .4870085 |
| 2.141 | .0579412 | .0063873 | .4870125 |
| 2.142 | .0575310 | .0063200 | .4870164 |
| 2.143 | .0571221 | .0062531 | .4870202 |
| 2.144 | .0567146 | .0061867 | .4870240 |
| 2.145 | .0563085 | .0061208 | .4870277 |
| 2.146 | .0559038 | .0060553 | .4870314 |
| 2.147 | .0555004 | .0059903 | .4870350 |
| 2.148 | .0550985 | .0059258 | .4870386 |
| 2.149 | .0546979 | .0058618 | .4870421 |
| 2.150 | .0542987 | .0057982 | .4870456 |

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TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho^* V_{cr}$ | p/p^* | A |
|------------|--------------------------|-----------|-----------|
| 2.151 | 0.0539009 | 0.0057351 | 0.4870490 |
| 2.152 | .0535045 | .0056724 | .4870523 |
| 2.153 | .0531095 | .0056102 | .4870557 |
| 2.154 | .0527159 | .0055485 | .4870589 |
| 2.155 | .0523237 | .0054872 | .4870621 |
| 2.156 | .0519329 | .0054264 | .4870653 |
| 2.157 | .0515435 | .0053660 | .4870684 |
| 2.158 | .0511555 | .0053061 | .4870715 |
| 2.159 | .0507689 | .0052467 | .4870745 |
| 2.160 | .0503838 | .0051877 | .4870775 |
| 2.161 | .0500000 | .0051291 | .4870805 |
| 2.162 | .0496177 | .0050710 | .4870834 |
| 2.163 | .0492368 | .0050133 | .4870862 |
| 2.164 | .0488573 | .0049561 | .4870890 |
| 2.165 | .0484792 | .0048993 | .4870918 |
| 2.166 | .0481026 | .0048430 | .4870945 |
| 2.167 | .0477273 | .0047871 | .4870972 |
| 2.168 | .0473535 | .0047316 | .4870998 |
| 2.169 | .0469812 | .0046766 | .4871024 |
| 2.170 | .0466102 | .0046220 | .4871050 |
| 2.171 | .0462407 | .0045678 | .4871075 |
| 2.172 | .0458727 | .0045141 | .4871099 |
| 2.173 | .0455060 | .0044608 | .4871124 |
| 2.174 | .0451408 | .0044079 | .4871148 |
| 2.175 | .0447771 | .0043555 | .4871171 |
| 2.176 | .0444148 | .0043034 | .4871195 |
| 2.177 | .0440539 | .0042518 | .4871217 |
| 2.178 | .0436945 | .0042007 | .4871240 |
| 2.179 | .0433365 | .0041499 | .4871262 |
| 2.180 | .0429800 | .0040995 | .4871284 |
| 2.181 | .0426250 | .0040496 | .4871305 |
| 2.182 | .0422713 | .0040001 | .4871326 |
| 2.183 | .0419192 | .0039510 | .4871347 |
| 2.184 | .0415685 | .0039023 | .4871367 |
| 2.185 | .0412192 | .0038540 | .4871387 |
| 2.186 | .0408715 | .0038061 | .4871407 |
| 2.187 | .0405252 | .0037586 | .4871426 |
| 2.188 | .0401803 | .0037115 | .4871445 |
| 2.189 | .0398369 | .0036648 | .4871464 |
| 2.190 | .0394950 | .0036186 | .4871482 |
| 2.191 | .0391545 | .0035727 | .4871500 |
| 2.192 | .0388155 | .0035272 | .4871518 |
| 2.193 | .0384780 | .0034821 | .4871535 |
| 2.194 | .0381420 | .0034374 | .4871552 |
| 2.195 | .0378074 | .0033931 | .4871569 |
| 2.196 | .0374743 | .0033492 | .4871586 |
| 2.197 | .0371427 | .0033057 | .4871602 |
| 2.198 | .0368126 | .0032625 | .4871618 |
| 2.199 | .0364839 | .0032198 | .4871634 |
| 2.200 | .0361567 | .0031774 | .4871649 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|---------|
| 2.201 | 0.03558311 | 0.0031354 | 4871664 |
| 2.202 | 0.03555069 | 0.0030938 | 4871679 |
| 2.203 | 0.0351841 | 0.0030526 | 4871694 |
| 2.204 | 0.0348629 | 0.0030117 | 4871708 |
| 2.205 | 0.0345432 | 0.0029712 | 4871722 |
| 2.206 | 0.0342249 | 0.0029311 | 4871736 |
| 2.207 | 0.0339082 | 0.0028914 | 4871749 |
| 2.208 | 0.0335929 | 0.0028520 | 4871762 |
| 2.209 | 0.0332791 | 0.0028130 | 4871775 |
| 2.210 | 0.0329668 | 0.0027743 | 4871788 |
| 2.211 | 0.0326561 | 0.0027361 | 4871801 |
| 2.212 | 0.0323468 | 0.0026981 | 4871813 |
| 2.213 | 0.0320390 | 0.0026606 | 4871825 |
| 2.214 | 0.0317327 | 0.0026234 | 4871837 |
| 2.215 | 0.0314279 | 0.0025865 | 4871849 |
| 2.216 | 0.0311246 | 0.0025500 | 4871860 |
| 2.217 | 0.0308229 | 0.0025139 | 4871871 |
| 2.218 | 0.0305226 | 0.0024781 | 4871882 |
| 2.219 | 0.0302238 | 0.0024427 | 4871893 |
| 2.220 | 0.0299265 | 0.0024076 | 4871904 |
| 2.221 | 0.0296308 | 0.0023729 | 4871914 |
| 2.222 | 0.0293365 | 0.0023385 | 4871924 |
| 2.223 | 0.0290438 | 0.0023044 | 4871934 |
| 2.224 | 0.0287526 | 0.0022707 | 4871944 |
| 2.225 | 0.0284629 | 0.0022373 | 4871953 |
| 2.226 | 0.0281747 | 0.0022043 | 4871963 |
| 2.227 | 0.0278880 | 0.0021716 | 4871972 |
| 2.228 | 0.0276028 | 0.0021392 | 4871981 |
| 2.229 | 0.0273191 | 0.0021072 | 4871990 |
| 2.230 | 0.0270370 | 0.0020755 | 4871998 |
| 2.231 | 0.0267564 | 0.0020441 | 4872007 |
| 2.232 | 0.0264773 | 0.0020130 | 4872015 |
| 2.233 | 0.0261997 | 0.0019823 | 4872023 |
| 2.234 | 0.0259236 | 0.0019519 | 4872031 |
| 2.235 | 0.0256491 | 0.0019218 | 4872039 |
| 2.236 | 0.0253760 | 0.0018920 | 4872046 |
| 2.237 | 0.0251045 | 0.0018626 | 4872054 |
| 2.238 | 0.0248345 | 0.0018335 | 4872061 |
| 2.239 | 0.0245661 | 0.0018047 | 4872068 |
| 2.240 | 0.0242991 | 0.0017761 | 4872075 |
| 2.241 | 0.0240337 | 0.0017480 | 4872082 |
| 2.242 | 0.0237698 | 0.0017201 | 4872089 |
| 2.243 | 0.0235074 | 0.0016925 | 4872095 |
| 2.244 | 0.0232466 | 0.0016652 | 4872102 |
| 2.245 | 0.0229873 | 0.0016382 | 4872108 |
| 2.246 | 0.0227295 | 0.0016116 | 4872114 |
| 2.247 | 0.0224733 | 0.0015852 | 4872120 |
| 2.248 | 0.0222185 | 0.0015591 | 4872126 |
| 2.249 | 0.0219653 | 0.0015334 | 4872131 |
| 2.250 | 0.0217136 | 0.0015079 | 4872137 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.251 | 0.0214635 | 0.0014827 | 0.4872142 |
| 2.252 | .0212149 | .0014578 | .4872148 |
| 2.253 | .0209678 | .0014332 | .4872153 |
| 2.254 | .0207222 | .0014089 | .4872158 |
| 2.255 | .0204782 | .0013848 | .4872163 |
| 2.256 | .0202357 | .0013611 | .4872168 |
| 2.257 | .0199947 | .0013376 | .4872172 |
| 2.258 | .0197553 | .0013144 | .4872177 |
| 2.259 | .0195174 | .0012915 | .4872182 |
| 2.260 | .0192810 | .0012689 | .4872186 |
| 2.261 | .0190461 | .0012465 | .4872190 |
| 2.262 | .0188128 | .0012245 | .4872194 |
| 2.263 | .0185810 | .0012026 | .4872199 |
| 2.264 | .0183508 | .0011811 | .4872203 |
| 2.265 | .0181221 | .0011598 | .4872206 |
| 2.266 | .0178949 | .0011388 | .4872210 |
| 2.267 | .0176692 | .0011181 | .4872214 |
| 2.268 | .0174451 | .0010976 | .4872218 |
| 2.269 | .0172224 | .0010774 | .4872221 |
| 2.270 | .0170014 | .0010574 | .4872224 |
| 2.271 | .0167818 | .0010377 | .4872228 |
| 2.272 | .0165638 | .0010182 | .4872231 |
| 2.273 | .0163473 | .0009990 | .4872234 |
| 2.274 | .0161324 | .0009801 | .4872237 |
| 2.275 | .0159190 | .0009614 | .4872240 |
| 2.276 | .0157071 | .0009430 | .4872243 |
| 2.277 | .0154967 | .0009248 | .4872246 |
| 2.278 | .0152879 | .0009068 | .4872249 |
| 2.279 | .0150806 | .0008891 | .4872251 |
| 2.280 | .0148748 | .0008716 | .4872254 |
| 2.281 | .0146705 | .0008544 | .4872257 |
| 2.282 | .0144678 | .0008374 | .4872259 |
| 2.283 | .0142666 | .0008206 | .4872261 |
| 2.284 | .0140669 | .0008041 | .4872264 |
| 2.285 | .0138688 | .0007878 | .4872266 |
| 2.286 | .0136721 | .0007717 | .4872268 |
| 2.287 | .0134770 | .0007559 | .4872270 |
| 2.288 | .0132834 | .0007403 | .4872272 |
| 2.289 | .0130914 | .0007249 | .4872274 |
| 2.290 | .0129008 | .0007097 | .4872276 |
| 2.291 | .0127118 | .0006948 | .4872278 |
| 2.292 | .0125243 | .0006801 | .4872280 |
| 2.293 | .0123383 | .0006656 | .4872282 |
| 2.294 | .0121539 | .0006513 | .4872284 |
| 2.295 | .0119709 | .0006372 | .4872285 |
| 2.296 | .0117895 | .0006233 | .4872287 |
| 2.297 | .0116096 | .0006097 | .4872289 |
| 2.298 | .0114312 | .0005963 | .4872290 |
| 2.299 | .0112542 | .0005830 | .4872292 |
| 2.300 | .0110789 | .0005700 | .4872293 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.301 | 0.0109050 | 0.0005572 | 0.4872295 |
| 2.302 | .0107326 | .0005446 | .4872296 |
| 2.303 | .0105618 | .0005321 | .4872297 |
| 2.304 | .0103924 | .0005199 | .4872299 |
| 2.305 | .0102246 | .0005079 | .4872300 |
| 2.306 | .0100582 | .0004961 | .4872301 |
| 2.307 | .0098934 | .0004844 | .4872302 |
| 2.308 | .0097300 | .0004730 | .4872303 |
| 2.309 | .0095682 | .0004617 | .4872304 |
| 2.310 | .0094079 | .0004506 | .4872305 |
| 2.311 | .0092490 | .0004398 | .4872306 |
| 2.312 | .0090916 | .0004291 | .4872307 |
| 2.313 | .0089358 | .0004185 | .4872308 |
| 2.314 | .0087814 | .0004082 | .4872309 |
| 2.315 | .0086285 | .0003981 | .4872310 |
| 2.316 | .0084771 | .0003881 | .4872311 |
| 2.317 | .0083272 | .0003783 | .4872312 |
| 2.318 | .0081788 | .0003686 | .4872313 |
| 2.319 | .0080319 | .0003592 | .4872313 |
| 2.320 | .0078864 | .0003499 | .4872314 |
| 2.321 | .0077424 | .0003408 | .4872315 |
| 2.322 | .0075999 | .0003318 | .4872316 |
| 2.323 | .0074588 | .0003231 | .4872316 |
| 2.324 | .0073193 | .0003144 | .4872317 |
| 2.325 | .0071812 | .0003060 | .4872317 |
| 2.326 | .0070445 | .0002977 | .4872318 |
| 2.327 | .0069094 | .0002895 | .4872319 |
| 2.328 | .0067757 | .0002816 | .4872319 |
| 2.329 | .0066434 | .0002737 | .4872320 |
| 2.330 | .0065127 | .0002660 | .4872320 |
| 2.331 | .0063833 | .0002585 | .4872321 |
| 2.332 | .0062554 | .0002512 | .4872321 |
| 2.333 | .0061290 | .0002439 | .4872322 |
| 2.334 | .0060040 | .0002369 | .4872322 |
| 2.335 | .0058805 | .0002299 | .4872322 |
| 2.336 | .0057584 | .0002231 | .4872323 |
| 2.337 | .0056377 | .0002165 | .4872323 |
| 2.338 | .0055185 | .0002100 | .4872324 |
| 2.339 | .0054007 | .0002036 | .4872324 |
| 2.340 | .0052844 | .0001974 | .4872324 |
| 2.341 | .0051694 | .0001913 | .4872324 |
| 2.342 | .0050559 | .0001853 | .4872325 |
| 2.343 | .0049439 | .0001795 | .4872325 |
| 2.344 | .0048332 | .0001738 | .4872325 |
| 2.345 | .0047239 | .0001682 | .4872326 |
| 2.346 | .0046161 | .0001628 | .4872326 |
| 2.347 | .0045097 | .0001574 | .4872326 |
| 2.348 | .0044046 | .0001522 | .4872326 |
| 2.349 | .0043010 | .0001472 | .4872327 |
| 2.350 | .0041988 | .0001422 | .4872327 |

TABLE I. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.351 | 0.0040979 | 0.0001374 | 0.4872327 |
| 2.352 | .0039985 | .0001326 | .4872327 |
| 2.353 | .0039004 | .0001280 | .4872327 |
| 2.354 | .0038037 | .0001235 | .4872328 |
| 2.355 | .0037085 | .0001191 | .4872328 |
| 2.356 | .0036145 | .0001149 | .4872328 |
| 2.357 | .0035220 | .0001107 | .4872328 |
| 2.358 | .0034308 | .0001067 | .4872328 |
| 2.359 | .0033409 | .0001027 | .4872328 |
| 2.360 | .0032525 | .0000989 | .4872328 |
| 2.361 | .0031654 | .0000951 | .4872328 |
| 2.362 | .0030796 | .0000915 | .4872329 |
| 2.363 | .0029952 | .0000879 | .4872329 |
| 2.364 | .0029121 | .0000845 | .4872329 |
| 2.365 | .0028303 | .0000811 | .4872329 |
| 2.366 | .0027499 | .0000779 | .4872329 |
| 2.367 | .0026708 | .0000747 | .4872329 |
| 2.368 | .0025931 | .0000716 | .4872329 |
| 2.369 | .0025166 | .0000687 | .4872329 |
| 2.370 | .0024415 | .0000658 | .4872329 |
| 2.371 | .0023676 | .0000630 | .4872329 |
| 2.372 | .0022951 | .0000603 | .4872330 |
| 2.373 | .0022239 | .0000576 | .4872330 |
| 2.374 | .0021539 | .0000551 | .4872330 |
| 2.375 | .0020852 | .0000526 | .4872330 |
| 2.376 | .0020178 | .0000502 | .4872330 |
| 2.377 | .0019517 | .0000479 | .4872330 |
| 2.378 | .0018869 | .0000456 | .4872330 |
| 2.379 | .0018233 | .0000435 | .4872330 |
| 2.380 | .0017610 | .0000414 | .4872330 |
| 2.381 | .0016999 | .0000394 | .4872330 |
| 2.382 | .0016401 | .0000374 | .4872330 |
| 2.383 | .0015815 | .0000355 | .4872330 |
| 2.384 | .0015241 | .0000337 | .4872330 |
| 2.385 | .0014680 | .0000320 | .4872330 |
| 2.386 | .0014130 | .0000303 | .4872330 |
| 2.387 | .0013593 | .0000287 | .4872330 |
| 2.388 | .0013068 | .0000271 | .4872330 |
| 2.389 | .0012555 | .0000256 | .4872330 |
| 2.390 | .0012054 | .0000242 | .4872330 |
| 2.391 | .0011564 | .0000228 | .4872330 |
| 2.392 | .0011087 | .0000215 | .4872330 |
| 2.393 | .0010621 | .0000202 | .4872330 |
| 2.394 | .0010167 | .0000190 | .4872330 |
| 2.395 | .0009724 | .0000179 | .4872330 |
| 2.396 | .0009292 | .0000168 | .4872330 |
| 2.397 | .0008872 | .0000157 | .4872330 |
| 2.398 | .0008464 | .0000147 | .4872330 |
| 2.399 | .0008066 | .0000137 | .4872330 |
| 2.400 | .0007680 | .0000128 | .4872330 |

TABLE I. - Concluded. MASS-FLOW PARAMETERS FOR $\gamma = 1.4$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|----------|
| 2.401 | 0.0007305 | 0.0000119 | .4872330 |
| 2.402 | .0006940 | .0000111 | .4872330 |
| 2.403 | .0006587 | .0000103 | .4872330 |
| 2.404 | .0006244 | .0000096 | .4872330 |
| 2.405 | .0005912 | .0000088 | .4872330 |
| 2.406 | .0005591 | .0000082 | .4872330 |
| 2.407 | .0005280 | .0000075 | .4872330 |
| 2.408 | .0004979 | .0000069 | .4872330 |
| 2.409 | .0004689 | .0000064 | .4872330 |
| 2.410 | .0004409 | .0000059 | .4872330 |
| 2.411 | .0004139 | .0000054 | .4872330 |
| 2.412 | .0003879 | .0000049 | .4872330 |
| 2.413 | .0003629 | .0000044 | .4872330 |
| 2.414 | .0003388 | .0000040 | .4872330 |
| 2.415 | .0003158 | .0000037 | .4872330 |
| 2.416 | .0002936 | .0000033 | .4872330 |
| 2.417 | .0002725 | .0000030 | .4872330 |
| 2.418 | .0002522 | .0000027 | .4872330 |
| 2.419 | .0002329 | .0000024 | .4872330 |
| 2.420 | .0002144 | .0000021 | .4872330 |
| 2.421 | .0001969 | .0000019 | .4872330 |
| 2.422 | .0001803 | .0000017 | .4872330 |
| 2.423 | .0001645 | .0000015 | .4872330 |
| 2.424 | .0001495 | .0000013 | .4872330 |
| 2.425 | .0001354 | .0000011 | .4872330 |
| 2.426 | .0001221 | .0000010 | .4872330 |
| 2.427 | .0001096 | .0000008 | .4872330 |
| 2.428 | .0000979 | .0000007 | .4872330 |
| 2.429 | .0000870 | .0000006 | .4872330 |
| 2.430 | .0000769 | .0000005 | .4872330 |
| 2.431 | .0000674 | .0000004 | .4872330 |
| 2.432 | .0000587 | .0000003 | .4872330 |
| 2.433 | .0000507 | .0000003 | .4872330 |
| 2.434 | .0000434 | .0000002 | .4872330 |
| 2.435 | .0000368 | .0000002 | .4872330 |
| 2.436 | .0000308 | .0000001 | .4872330 |
| 2.437 | .0000254 | .0000001 | .4872330 |
| 2.438 | .0000207 | .0000001 | .4872330 |
| 2.439 | .0000165 | .0000001 | .4872330 |
| 2.440 | .0000128 | .0000000 | .4872330 |
| 2.441 | .0000097 | .0000000 | .4872330 |
| 2.442 | .0000071 | .0000000 | .4872330 |
| 2.443 | .0000050 | .0000000 | .4872330 |
| 2.444 | .0000033 | .0000000 | .4872330 |
| 2.445 | .0000020 | .0000000 | .4872330 |
| 2.446 | .0000011 | .0000000 | .4872330 |
| 2.447 | .0000005 | .0000000 | .4872330 |
| 2.448 | .0000001 | .0000000 | .4872330 |
| 2.449 | .0000000 | .0000000 | .4872330 |

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TABLE III. - MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-------------|------------|
| 0 .000 | 0 .0000000 | 1 : 0000000 | 0 .0000000 |
| .001 | .0010000 | .9999994 | .0000000 |
| .002 | .0020000 | .9999977 | .0000000 |
| .003 | .0030000 | .9999946 | .0000000 |
| .004 | .0040000 | .9999907 | .0000000 |
| .005 | .0049999 | .9999855 | .0000000 |
| .006 | .0059999 | .9999795 | .0000001 |
| .007 | .0069998 | .9999721 | .0000001 |
| .008 | .0079998 | .9999639 | .0000002 |
| .009 | .0089997 | .9999539 | .0000003 |
| .010 | .0099996 | .9999435 | .0000004 |
| .011 | .0109994 | .9999314 | .0000005 |
| .012 | .0119992 | .9999184 | .0000007 |
| .013 | .0129990 | .9999045 | .0000008 |
| .014 | .0139988 | .9998889 | .0000010 |
| .015 | .0149985 | .9998729 | .0000013 |
| .016 | .0159982 | .9998551 | .0000015 |
| .017 | .0169979 | .9998365 | .0000018 |
| .018 | .0179975 | .9998166 | .0000022 |
| .019 | .0189970 | .9997958 | .0000026 |
| .020 | .0199965 | .9997737 | .0000030 |
| .021 | .0209960 | .9997507 | .0000035 |
| .022 | .0219954 | .9997264 | .0000040 |
| .023 | .0229947 | .9997009 | .0000046 |
| .024 | .0239940 | .9996744 | .0000052 |
| .025 | .0249932 | .9996467 | .0000059 |
| .026 | .0259924 | .9996177 | .0000066 |
| .027 | .0269914 | .9995878 | .0000074 |
| .028 | .0279904 | .9995566 | .0000083 |
| .029 | .0289894 | .9995246 | .0000092 |
| .030 | .0299883 | .9994912 | .0000102 |
| .031 | .0309870 | .9994570 | .0000112 |
| .032 | .0319857 | .9994210 | .0000123 |
| .033 | .0329844 | .9993846 | .0000135 |
| .034 | .0339829 | .9993465 | .0000148 |
| .035 | .0349814 | .9993076 | .0000161 |
| .036 | .0359797 | .9992677 | .0000176 |
| .037 | .0369780 | .9992261 | .0000191 |
| .038 | .0379761 | .9991841 | .0000206 |
| .039 | .0389742 | .9991404 | .0000223 |
| .040 | .0399722 | .9990958 | .0000241 |
| .041 | .0409700 | .9990499 | .0000260 |
| .042 | .0419678 | .9990031 | .0000279 |
| .043 | .0429654 | .9989551 | .0000299 |
| .044 | .0439630 | .9989061 | .0000321 |
| .045 | .0449604 | .9988559 | .0000343 |
| .046 | .0459577 | .9988044 | .0000366 |
| .047 | .0469549 | .9987520 | .0000391 |
| .048 | .0479519 | .9986983 | .0000416 |
| .049 | .0489489 | .9986434 | .0000443 |
| .050 | .0499457 | .9985875 | .0000470 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.051 | 0.0509423 | 0.9985304 | 0.0000499 |
| .052 | .0519389 | .9984724 | .0000529 |
| .053 | .0529353 | .9984131 | .0000560 |
| .054 | .0539316 | .9983529 | .0000592 |
| .055 | .0549277 | .9982910 | .0000626 |
| .056 | .0559237 | .9982287 | .0000661 |
| .057 | .0569195 | .9981647 | .0000697 |
| .058 | .0579152 | .9980998 | .0000734 |
| .059 | .0589108 | .9980340 | .0000772 |
| .060 | .0599061 | .9979665 | .0000812 |
| .061 | .0609014 | .9978986 | .0000853 |
| .062 | .0618964 | .9978289 | .0000896 |
| .063 | .0628913 | .9977584 | .0000940 |
| .064 | .0638861 | .9976866 | .0000986 |
| .065 | .0648807 | .9976139 | .0001033 |
| .066 | .0658751 | .9975400 | .0001081 |
| .067 | .0668693 | .9974651 | .0001131 |
| .068 | .0678634 | .9973890 | .0001182 |
| .069 | .0688573 | .9973116 | .0001235 |
| .070 | .0698510 | .9972334 | .0001289 |
| .071 | .0708445 | .9971538 | .0001345 |
| .072 | .0718378 | .9970729 | .0001403 |
| .073 | .0728310 | .9969912 | .0001462 |
| .074 | .0738239 | .9969082 | .0001523 |
| .075 | .0748167 | .9968244 | .0001585 |
| .076 | .0758093 | .9967392 | .0001649 |
| .077 | .0768017 | .9966532 | .0001715 |
| .078 | .0777938 | .9965655 | .0001783 |
| .079 | .0787858 | .9964773 | .0001852 |
| .080 | .0797776 | .9963874 | .0001923 |
| .081 | .0807692 | .9962967 | .0001996 |
| .082 | .0817605 | .9962051 | .0002070 |
| .083 | .0827516 | .9961117 | .0002147 |
| .084 | .0837426 | .9960180 | .0002225 |
| .085 | .0847333 | .9959225 | .0002305 |
| .086 | .0857238 | .9958262 | .0002387 |
| .087 | .0867140 | .9957286 | .0002472 |
| .088 | .0877040 | .9956301 | .0002557 |
| .089 | .0886938 | .9955303 | .0002645 |
| .090 | .0896834 | .9954297 | .0002735 |
| .091 | .0906728 | .9953278 | .0002827 |
| .092 | .0916619 | .9952246 | .0002921 |
| .093 | .0926507 | .9951206 | .0003017 |
| .094 | .0936394 | .9950153 | .0003115 |
| .095 | .0946277 | .9949086 | .0003216 |
| .096 | .0956159 | .9948012 | .0003318 |
| .097 | .0966037 | .9946924 | .0003422 |
| .098 | .0975914 | .9945828 | .0003529 |
| .099 | .0985787 | .9944719 | .0003637 |
| .100 | .0995659 | .9943601 | .0003748 |

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TABLE III. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|----------|
| .101 | .1005527 | .9942467 | .0003862 |
| .102 | .1015393 | .9941328 | .0003977 |
| .103 | .1025257 | .9940172 | .0004095 |
| .104 | .1035117 | .9939007 | .0004215 |
| .105 | .1044975 | .9937834 | .0004337 |
| .106 | .1054830 | .9936644 | .0004462 |
| .107 | .1064683 | .9935450 | .0004588 |
| .108 | .1074533 | .9934238 | .0004718 |
| .109 | .1084379 | .9933018 | .0004850 |
| .110 | .1094223 | .9931785 | .0004984 |
| .111 | .1104065 | .9930544 | .0005120 |
| .112 | .1113903 | .9929290 | .0005259 |
| .113 | .1123739 | .9928027 | .0005401 |
| .114 | .1133571 | .9926751 | .0005545 |
| .115 | .1143401 | .9925463 | .0005691 |
| .116 | .1153227 | .9924166 | .0005840 |
| .117 | .1163051 | .9922857 | .0005992 |
| .118 | .1172871 | .9921534 | .0006146 |
| .119 | .1182689 | .9920204 | .0006303 |
| .120 | .1192503 | .9918860 | .0006463 |
| .121 | .1202315 | .9917508 | .0006625 |
| .122 | .1212123 | .9916143 | .0006789 |
| .123 | .12221928 | .9914770 | .0006956 |
| .124 | .12321729 | .9913379 | .0007127 |
| .125 | .12421528 | .9911985 | .0007299 |
| .126 | .1252323 | .9910573 | .0007475 |
| .127 | .1262116 | .9909153 | .0007654 |
| .128 | .1270905 | .9907724 | .0007835 |
| .129 | .1280690 | .9906279 | .0008019 |
| .130 | .1290472 | .9904829 | .0008205 |
| .131 | .1300251 | .9903362 | .0008395 |
| .132 | .1310026 | .9901887 | .0008588 |
| .133 | .1319798 | .9900399 | .0008784 |
| .134 | .1329567 | .9898903 | .0008982 |
| .135 | .1339332 | .9897394 | .0009183 |
| .136 | .1349094 | .9895876 | .0009387 |
| .137 | .1358853 | .9894346 | .0009594 |
| .138 | .1368607 | .9892803 | .0009805 |
| .139 | .1378358 | .9891252 | .0010018 |
| .140 | .1388105 | .9889688 | .0010234 |
| .141 | .1397849 | .9888111 | .0010454 |
| .142 | .1407589 | .9886526 | .0010676 |
| .143 | .1417325 | .9884928 | .0010902 |
| .144 | .1427058 | .9883322 | .0011130 |
| .145 | .1436787 | .9881703 | .0011362 |
| .146 | .1446513 | .9880076 | .0011597 |
| .147 | .1456234 | .9878432 | .0011835 |
| .148 | .1465952 | .9876783 | .0012076 |
| .149 | .1475666 | .9875118 | .0012321 |
| .150 | .1485376 | .9873444 | .0012569 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|-----------|
| 0.151 | 0.1495083 | 0.9871762 | 0.0012820 |
| .152 | .1504785 | .9870064 | .0013074 |
| .153 | .1514483 | .9868361 | .0013332 |
| .154 | .1524178 | .9866641 | .0013593 |
| .155 | .1533868 | .9864912 | .0013857 |
| .156 | .1543554 | .9863171 | .0014125 |
| .157 | .1553237 | .9861422 | .0014396 |
| .158 | .1562916 | .9859660 | .0014670 |
| .159 | .1572590 | .9857890 | .0014948 |
| .160 | .1582261 | .9856107 | .0015229 |
| .161 | .1591927 | .9854312 | .0015514 |
| .162 | .1601589 | .9852508 | .0015802 |
| .163 | .1611247 | .9850692 | .0016094 |
| .164 | .1620900 | .9848863 | .0016389 |
| .165 | .1630550 | .9847026 | .0016688 |
| .166 | .1640195 | .9845176 | .0016991 |
| .167 | .1649836 | .9843318 | .0017296 |
| .168 | .1659472 | .9841447 | .0017606 |
| .169 | .1669105 | .9839568 | .0017918 |
| .170 | .1678733 | .9837672 | .0018236 |
| .171 | .1688357 | .9835773 | .0018556 |
| .172 | .1697975 | .9833856 | .0018880 |
| .173 | .1707590 | .9831931 | .0019208 |
| .174 | .1717201 | .9829998 | .0019539 |
| .175 | .1726806 | .9828048 | .0019875 |
| .176 | .1736408 | .9826094 | .0020213 |
| .177 | .1746005 | .9824123 | .0020556 |
| .178 | .1755597 | .9822144 | .0020903 |
| .179 | .1765185 | .9820153 | .0021253 |
| .180 | .1774768 | .9818153 | .0021607 |
| .181 | .1784346 | .9816141 | .0021965 |
| .182 | .1793921 | .9814121 | .0022327 |
| .183 | .1803490 | .9812088 | .0022692 |
| .184 | .1813054 | .9810042 | .0023062 |
| .185 | .1822614 | .9807989 | .0023436 |
| .186 | .1832169 | .9805922 | .0023813 |
| .187 | .1841719 | .9803844 | .0024195 |
| .188 | .1851265 | .9801757 | .0024580 |
| .189 | .1860805 | .9799658 | .0024970 |
| .190 | .1870341 | .9797550 | .0025363 |
| .191 | .1879872 | .9795430 | .0025761 |
| .192 | .1889399 | .9793302 | .0026162 |
| .193 | .1898920 | .9791158 | .0026568 |
| .194 | .1908436 | .9789009 | .0026977 |
| .195 | .1917947 | .9786844 | .0027391 |
| .196 | .1927453 | .9784670 | .0027809 |
| .197 | .1936955 | .9782489 | .0028231 |
| .198 | .1946451 | .9780290 | .0028658 |
| .199 | .1955943 | .9778088 | .0029087 |
| .200 | .1965428 | .9775869 | .0029522 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|-------------|
| 0 . 201 | 0 . 1974909 | 0 . 9773642 | 0 . 0029961 |
| . 202 | . 1984385 | . 9771403 | . 0030404 |
| . 203 | . 1993856 | . 9769155 | . 0030851 |
| . 204 | . 2003321 | . 9766896 | . 0031303 |
| . 205 | . 2012782 | . 9764628 | . 0031758 |
| . 206 | . 2022237 | . 9762347 | . 0032218 |
| . 207 | . 2031686 | . 9760055 | . 0032683 |
| . 208 | . 2041131 | . 9757754 | . 0033152 |
| . 209 | . 2050570 | . 9755441 | . 0033625 |
| . 210 | . 2060004 | . 9753116 | . 0034103 |
| . 211 | . 2069432 | . 9750782 | . 0034585 |
| . 212 | . 2078855 | . 9748436 | . 0035071 |
| . 213 | . 2088273 | . 9746083 | . 0035562 |
| . 214 | . 2097686 | . 9743716 | . 0036057 |
| . 215 | . 2107093 | . 9741342 | . 0036556 |
| . 216 | . 2116494 | . 9738951 | . 0037061 |
| . 217 | . 2125890 | . 9736557 | . 0037569 |
| . 218 | . 2135280 | . 9734146 | . 0038083 |
| . 219 | . 2144665 | . 9731727 | . 0038600 |
| . 220 | . 2154044 | . 9729300 | . 0039122 |
| . 221 | . 2163417 | . 9726856 | . 0039649 |
| . 222 | . 2172786 | . 9724408 | . 0040180 |
| . 223 | . 2182148 | . 9721945 | . 0040717 |
| . 224 | . 2191505 | . 9719473 | . 0041257 |
| . 225 | . 2200855 | . 9716989 | . 0041803 |
| . 226 | . 2210201 | . 9714496 | . 0042352 |
| . 227 | . 2219540 | . 9711992 | . 0042907 |
| . 228 | . 22228874 | . 9709480 | . 0043466 |
| . 229 | . 22238202 | . 9706955 | . 0044030 |
| . 230 | . 22247524 | . 9704419 | . 0044599 |
| . 231 | . 2256841 | . 9701874 | . 0045172 |
| . 232 | . 2266151 | . 9699317 | . 0045750 |
| . 233 | . 2275455 | . 9696748 | . 0046333 |
| . 234 | . 2284754 | . 9694171 | . 0046921 |
| . 235 | . 2294047 | . 9691582 | . 0047514 |
| . 236 | . 2303334 | . 9688985 | . 0048111 |
| . 237 | . 2312614 | . 9686376 | . 0048713 |
| . 238 | . 2321889 | . 9683759 | . 0049319 |
| . 239 | . 2331158 | . 9681125 | . 0049932 |
| . 240 | . 2340421 | . 9678488 | . 0050548 |
| . 241 | . 2349677 | . 9675835 | . 0051170 |
| . 242 | . 2358927 | . 9673173 | . 0051797 |
| . 243 | . 2368172 | . 9670504 | . 0052428 |
| . 244 | . 2377410 | . 9667818 | . 0053065 |
| . 245 | . 2386642 | . 9665129 | . 0053705 |
| . 246 | . 2395868 | . 9662424 | . 0054352 |
| . 247 | . 2405087 | . 9659710 | . 0055004 |
| . 248 | . 2414300 | . 9656985 | . 0055661 |
| . 249 | . 2423508 | . 9654251 | . 0056322 |
| . 250 | . 2432709 | . 9651506 | . 0056988 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.251 | 0.2441903 | 0.9648753 | 0.0057659 |
| .252 | .2451092 | .9645988 | .0058336 |
| .253 | .2460273 | .9643210 | .0059018 |
| .254 | .2469449 | .9640425 | .0059704 |
| .255 | .2478618 | .9637628 | .0060396 |
| .256 | .2487780 | .9634819 | .0061094 |
| .257 | .2496936 | .9632002 | .0061796 |
| .258 | .2506085 | .9629173 | .0062504 |
| .259 | .2515229 | .9626337 | .0063216 |
| .260 | .2524365 | .9623488 | .0063934 |
| .261 | .2533496 | .9620632 | .0064656 |
| .262 | .2542618 | .9617759 | .0065385 |
| .263 | .2551736 | .9614883 | .0066118 |
| .264 | .2560846 | .9611991 | .0066857 |
| .265 | .2569949 | .9609091 | .0067601 |
| .266 | .2579047 | .9606183 | .0068350 |
| .267 | .2588136 | .9603259 | .0069105 |
| .268 | .2597220 | .9600332 | .0069864 |
| .269 | .2606297 | .9597388 | .0070630 |
| .270 | .2615367 | .9594437 | .0071400 |
| .270 | .2615367 | .9594437 | .0071400 |
| .271 | .2624430 | .9591474 | .0072177 |
| .272 | .2633486 | .9588503 | .0072958 |
| .273 | .2642536 | .9585520 | .0073744 |
| .274 | .2651579 | .9582530 | .0074536 |
| .275 | .2660615 | .9579528 | .0075333 |
| .276 | .2669643 | .9576514 | .0076137 |
| .277 | .2678666 | .9573492 | .0076945 |
| .278 | .2687681 | .9570459 | .0077759 |
| .279 | .2696688 | .9567413 | .0078578 |
| .280 | .2705690 | .9564360 | .0079403 |
| .281 | .2714683 | .9561296 | .0080234 |
| .282 | .2723671 | .9558223 | .0081069 |
| .283 | .2732651 | .9555139 | .0081911 |
| .284 | .2741624 | .9552047 | .0082757 |
| .285 | .2750589 | .9548939 | .0083610 |
| .286 | .2759549 | .9545828 | .0084467 |
| .287 | .2768499 | .9542701 | .0085332 |
| .288 | .2777444 | .9539567 | .0086201 |
| .289 | .2786381 | .9536424 | .0087075 |
| .290 | .2795311 | .9533266 | .0087957 |
| .291 | .2804234 | .9530105 | .0088842 |
| .292 | .2813149 | .9526927 | .0089734 |
| .293 | .2822057 | .9523742 | .0090632 |
| .294 | .2830958 | .9520546 | .0091535 |
| .295 | .2839851 | .9517342 | .0092444 |
| .296 | .2848737 | .9514126 | .0093358 |
| .297 | .2857616 | .9510902 | .0094278 |
| .298 | .2866488 | .9507667 | .0095204 |
| .299 | .2875351 | .9504421 | .0096136 |
| .300 | .2884208 | .9501167 | .0097073 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| v/v_{cr} | $\rho v / \rho' v_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|-----------|
| .301 | 0.2893057 | 0.9497901 | 0.0098016 |
| .302 | .2901898 | .9494623 | .0098966 |
| .303 | .2910732 | .9491339 | .0099921 |
| .304 | .2919558 | .9488042 | .0100882 |
| .305 | .2928377 | .9484738 | .0101848 |
| .306 | .2937188 | .9481423 | .0102820 |
| .307 | .2945993 | .9478100 | .0103797 |
| .308 | .2954788 | .9474761 | .0104783 |
| .309 | .2963577 | .9471419 | .0105771 |
| .310 | .2972357 | .9468062 | .0106768 |
| .311 | .2981130 | .9464697 | .0107770 |
| .312 | .2989896 | .9461324 | .0108777 |
| .313 | .2998653 | .9457936 | .0109791 |
| .314 | .3007403 | .9454545 | .0110809 |
| .315 | .3016145 | .9451138 | .0111836 |
| .316 | .3024879 | .9447723 | .0112867 |
| .317 | .3033605 | .9444298 | .0113905 |
| .318 | .3042324 | .9440865 | .0114948 |
| .319 | .3051034 | .9437420 | .0115997 |
| .320 | .3059737 | .9433968 | .0117052 |
| .321 | .3068432 | .9430505 | .0118113 |
| .322 | .3077119 | .9427030 | .0119181 |
| .323 | .3085798 | .9423548 | .0120254 |
| .324 | .3094469 | .9420054 | .0121333 |
| .325 | .3103131 | .9416549 | .0122419 |
| .326 | .3111786 | .9413037 | .0123511 |
| .327 | .3120432 | .9409513 | .0124609 |
| .328 | .3129072 | .9405982 | .0125712 |
| .329 | .3137702 | .9402440 | .0126822 |
| .330 | .3146325 | .9398891 | .0127937 |
| .331 | .3154939 | .9395326 | .0129060 |
| .332 | .3163546 | .9391758 | .0130188 |
| .333 | .3172143 | .9388174 | .0131323 |
| .334 | .3180733 | .9384583 | .0132463 |
| .335 | .3189315 | .9380985 | .0133609 |
| .336 | .3197888 | .9377372 | .0134763 |
| .337 | .3206454 | .9373755 | .0135921 |
| .338 | .3215010 | .9370124 | .0137088 |
| .339 | .3223559 | .9366485 | .0138259 |
| .340 | .3232098 | .9362834 | .0139437 |
| .341 | .3240630 | .9359177 | .0140621 |
| .342 | .3249154 | .9355508 | .0141811 |
| .343 | .3257669 | .9351832 | .0143007 |
| .344 | .3266176 | .9348145 | .0144210 |
| .345 | .3274674 | .9344447 | .0145419 |
| .346 | .3283164 | .9340742 | .0146634 |
| .347 | .3291645 | .9337025 | .0147856 |
| .348 | .3300117 | .9333297 | .0149085 |
| .349 | .3308581 | .9329563 | .0150319 |
| .350 | .3317037 | .9325817 | .0151560 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-------------|-------------|
| 0 . 351 | 0 . 3325484 | 0 . 9322064 | 0 . 0152806 |
| . 352 | . 3333922 | . 9318299 | . 0154060 |
| . 353 | . 3342353 | . 9314528 | . 0155319 |
| . 354 | . 3350773 | . 9310742 | . 0156586 |
| . 355 | . 3359186 | . 9306952 | . 0157857 |
| . 356 | . 3367590 | . 9303148 | . 0159137 |
| . 357 | . 3375985 | . 9299336 | . 0160422 |
| . 358 | . 3384372 | . 9295518 | . 0161713 |
| . 359 | . 3392749 | . 9291684 | . 0163012 |
| . 360 | . 3401119 | . 9287847 | . 0164315 |
| . 361 | . 3409478 | . 9283996 | . 0165627 |
| . 362 | . 3417829 | . 9280137 | . 0166944 |
| . 363 | . 3426172 | . 9276267 | . 0168268 |
| . 364 | . 3434506 | . 9272390 | . 0169598 |
| . 365 | . 3442830 | . 9268503 | . 0170935 |
| . 366 | . 3451147 | . 9264608 | . 0172277 |
| . 367 | . 3459454 | . 9260702 | . 0173627 |
| . 368 | . 3467752 | . 9256786 | . 0174983 |
| . 369 | . 3476041 | . 9252862 | . 0176346 |
| . 370 | . 3484321 | . 9248928 | . 0177715 |
| . 371 | . 3492592 | . 9244982 | . 0179091 |
| . 372 | . 3500854 | . 9241030 | . 0180473 |
| . 373 | . 3509107 | . 9237067 | . 0181862 |
| . 374 | . 3517351 | . 9233097 | . 0183257 |
| . 375 | . 3525586 | . 9229116 | . 0184659 |
| . 376 | . 3533813 | . 9225128 | . 0186067 |
| . 377 | . 3542028 | . 9221125 | . 0187483 |
| . 378 | . 3550237 | . 9217120 | . 0188903 |
| . 379 | . 3558435 | . 9213099 | . 0190332 |
| . 380 | . 3566624 | . 9209072 | . 0191767 |
| . 381 | . 3574805 | . 9205038 | . 0193207 |
| . 382 | . 3582975 | . 9200989 | . 0194656 |
| . 383 | . 3591137 | . 9196938 | . 0196110 |
| . 384 | . 3599289 | . 9192871 | . 0197572 |
| . 385 | . 3607432 | . 9188798 | . 0199039 |
| . 386 | . 3615566 | . 9184714 | . 0200514 |
| . 387 | . 3623690 | . 9180623 | . 0201995 |
| . 388 | . 3631805 | . 9176522 | . 0203483 |
| . 389 | . 3639912 | . 9172414 | . 0204976 |
| . 390 | . 3648008 | . 9168295 | . 0206477 |
| . 391 | . 3656095 | . 9164165 | . 0207986 |
| . 392 | . 3664173 | . 9160029 | . 0209500 |
| . 393 | . 3672241 | . 9155882 | . 0211021 |
| . 394 | . 3680299 | . 9151724 | . 0212549 |
| . 395 | . 3688348 | . 9147560 | . 0214083 |
| . 396 | . 3696387 | . 9143385 | . 0215625 |
| . 397 | . 3704418 | . 9139203 | . 0217172 |
| . 398 | . 3712439 | . 9135011 | . 0218727 |
| . 399 | . 3720450 | . 9130812 | . 0220288 |
| . 400 | . 3728451 | . 9126598 | . 0221857 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.401 | 0.3736443 | 0.9122382 | 0.0223431 |
| .402 | .3744425 | .9118151 | .0225013 |
| .403 | .3752397 | .9113914 | .0226601 |
| .404 | .3760361 | .9109670 | .0228196 |
| .405 | .3768313 | .9105412 | .0229799 |
| .406 | .3776258 | .9101151 | .0231406 |
| .407 | .3784191 | .9096875 | .0233022 |
| .408 | .3792115 | .9092593 | .0234644 |
| .409 | .3800029 | .9088301 | .0236274 |
| .410 | .3807934 | .9084001 | .0237909 |
| .411 | .3815828 | .9079692 | .0239552 |
| .412 | .3823714 | .9075376 | .0241201 |
| .413 | .3831589 | .9071049 | .0242857 |
| .414 | .3839454 | .9066712 | .0244520 |
| .415 | .3847309 | .9062369 | .0246190 |
| .416 | .3855155 | .9058015 | .0247866 |
| .417 | .3862989 | .9053650 | .0249551 |
| .418 | .3870815 | .9049280 | .0251841 |
| .419 | .3878630 | .9044898 | .0252938 |
| .420 | .3886436 | .9040511 | .0254642 |
| .421 | .3894232 | .9036113 | .0256353 |
| .422 | .3902018 | .9031709 | .0258070 |
| .423 | .3909793 | .9027290 | .0259795 |
| .424 | .3917559 | .9022869 | .0261526 |
| .425 | .3925314 | .9018434 | .0263265 |
| .426 | .3933059 | .9013992 | .0265010 |
| .427 | .3940795 | .9009544 | .0266761 |
| .428 | .3948519 | .9005082 | .0268522 |
| .429 | .3956235 | .9000617 | .0270286 |
| .430 | .3963939 | .8996138 | .0272060 |
| .431 | .3971634 | .8991653 | .0273839 |
| .432 | .3979318 | .8987158 | .0275627 |
| .433 | .3986992 | .8982656 | .0277420 |
| .434 | .3994656 | .8978144 | .0279220 |
| .435 | .4002310 | .8973626 | .0281027 |
| .436 | .4009954 | .8969098 | .0282841 |
| .437 | .4017586 | .8964559 | .0284663 |
| .438 | .4025209 | .8960014 | .0286490 |
| .439 | .4032822 | .8955459 | .0288325 |
| .440 | .4040423 | .8950894 | .0290168 |
| .441 | .4048015 | .8946323 | .0292017 |
| .442 | .4055596 | .8941742 | .0293873 |
| .443 | .4063167 | .8937154 | .0295735 |
| .444 | .4070727 | .8932557 | .0297605 |
| .445 | .4078278 | .8927953 | .0299481 |
| .446 | .4085817 | .8923335 | .0301366 |
| .447 | .4093347 | .8918715 | .0303255 |
| .448 | .4100864 | .8914081 | .0305154 |
| .449 | .4108372 | .8909441 | .0307058 |
| .450 | .4115870 | .8904795 | .0308969 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-------------------|-------------------|
| 0 . 4 5 1 | 0 . 4 1 2 3 3 5 6 | 0 . 8 9 0 0 1 3 5 | 0 . 0 3 1 0 8 8 9 |
| . 4 5 2 | . 4 1 3 0 8 3 4 | . 8 8 9 5 4 7 3 | . 0 3 1 2 8 1 3 |
| . 4 5 3 | . 4 1 3 8 2 9 8 | . 8 8 9 0 7 9 7 | . 0 3 1 4 7 4 6 |
| . 4 5 4 | . 4 1 4 5 7 5 4 | . 8 8 8 6 1 1 5 | . 0 3 1 6 6 8 5 |
| . 4 5 5 | . 4 1 5 3 1 9 8 | . 8 8 8 1 4 2 3 | . 0 3 1 8 6 3 2 |
| . 4 5 6 | . 4 1 6 0 6 3 2 | . 8 8 7 6 7 2 5 | . 0 3 2 0 5 8 5 |
| . 4 5 7 | . 4 1 6 8 0 5 5 | . 8 8 7 2 0 1 7 | . 0 3 2 2 5 4 6 |
| . 4 5 8 | . 4 1 7 5 4 6 8 | . 8 8 6 7 3 0 3 | . 0 3 2 4 5 1 3 |
| . 4 5 9 | . 4 1 8 2 8 6 9 | . 8 8 6 2 5 7 9 | . 0 3 2 6 4 8 7 |
| . 4 6 0 | . 4 1 9 0 2 6 0 | . 8 8 5 7 8 4 5 | . 0 3 2 8 4 6 9 |
| . 4 6 1 | . 4 1 9 7 6 4 1 | . 8 8 5 3 1 0 5 | . 0 3 3 0 4 5 6 |
| . 4 6 2 | . 4 2 0 5 0 1 0 | . 8 8 4 8 3 5 6 | . 0 3 3 2 4 5 2 |
| . 4 6 3 | . 4 2 1 2 3 6 8 | . 8 8 4 3 5 9 6 | . 0 3 3 4 4 5 5 |
| . 4 6 4 | . 4 2 1 9 7 1 6 | . 8 8 3 8 8 3 1 | . 0 3 3 6 4 6 4 |
| . 4 6 5 | . 4 2 2 7 0 5 3 | . 8 8 3 4 0 5 5 | . 0 3 3 8 4 8 1 |
| . 4 6 6 | . 4 2 3 4 3 7 9 | . 8 8 2 9 2 7 4 | . 0 3 4 0 5 0 4 |
| . 4 6 7 | . 4 2 4 1 6 9 5 | . 8 8 2 4 4 8 3 | . 0 3 4 2 5 3 4 |
| . 4 6 8 | . 4 2 4 9 0 0 0 | . 8 8 1 9 6 8 6 | . 0 3 4 4 5 7 1 |
| . 4 6 9 | . 4 2 5 6 2 9 2 | . 8 8 1 4 8 7 6 | . 0 3 4 6 6 1 6 |
| . 4 7 0 | . 4 2 6 3 5 7 6 | . 8 8 1 0 0 6 3 | . 0 3 4 8 6 6 7 |
| . 4 7 1 | . 4 2 7 0 8 4 7 | . 8 8 0 5 2 3 7 | . 0 3 5 0 7 2 6 |
| . 4 7 2 | . 4 2 7 8 1 0 8 | . 8 8 0 0 4 0 5 | . 0 3 5 2 7 9 1 |
| . 4 7 3 | . 4 2 8 5 3 5 9 | . 8 7 9 5 5 6 7 | . 0 3 5 4 8 6 3 |
| . 4 7 4 | . 4 2 9 2 5 9 6 | . 8 7 9 0 7 1 6 | . 0 3 5 6 9 4 4 |
| . 4 7 5 | . 4 2 9 9 8 2 5 | . 8 7 8 5 8 6 2 | . 0 3 5 9 0 2 9 |
| . 4 7 6 | . 4 3 0 7 0 4 1 | . 8 7 8 0 9 9 5 | . 0 3 6 1 1 2 3 |
| . 4 7 7 | . 4 3 1 4 2 4 7 | . 8 7 7 6 1 2 3 | . 0 3 6 3 2 2 4 |
| . 4 7 8 | . 4 3 2 1 4 4 2 | . 8 7 7 1 2 4 0 | . 0 3 6 5 3 3 2 |
| . 4 7 9 | . 4 3 2 8 6 2 6 | . 8 7 6 6 3 5 2 | . 0 3 6 7 4 4 6 |
| . 4 8 0 | . 4 3 3 5 7 9 8 | . 8 7 6 1 4 5 4 | . 0 3 6 9 5 6 8 |
| . 4 8 1 | . 4 3 4 2 9 6 1 | . 8 7 5 6 5 5 1 | . 0 3 7 1 6 9 6 |
| . 4 8 2 | . 4 3 5 0 1 1 1 | . 8 7 5 1 6 3 8 | . 0 3 7 3 8 3 1 |
| . 4 8 3 | . 4 3 5 7 2 5 0 | . 8 7 4 6 7 1 5 | . 0 3 7 5 9 7 4 |
| . 4 8 4 | . 4 3 6 4 3 7 9 | . 8 7 4 1 7 8 7 | . 0 3 7 8 1 2 3 |
| . 4 8 5 | . 4 3 7 1 4 9 6 | . 8 7 3 6 8 4 8 | . 0 3 8 0 2 8 0 |
| . 4 8 6 | . 4 3 7 8 6 0 1 | . 8 7 3 1 9 0 1 | . 0 3 8 2 4 4 5 |
| . 4 8 7 | . 4 3 8 5 6 9 5 | . 8 7 2 6 9 4 8 | . 0 3 8 4 6 1 6 |
| . 4 8 8 | . 4 3 9 2 7 7 8 | . 8 7 2 1 9 8 5 | . 0 3 8 6 7 9 4 |
| . 4 8 9 | . 4 3 9 9 8 5 1 | . 8 7 1 7 0 1 7 | . 0 3 8 8 9 7 8 |
| . 4 9 0 | . 4 4 0 6 9 1 2 | . 8 7 1 2 0 3 9 | . 0 3 9 1 1 7 0 |
| . 4 9 1 | . 4 4 1 3 9 6 2 | . 8 7 0 7 0 5 5 | . 0 3 9 3 3 6 8 |
| . 4 9 2 | . 4 4 2 0 9 9 9 | . 8 7 0 2 0 5 8 | . 0 3 9 5 5 7 5 |
| . 4 9 3 | . 4 4 2 8 0 2 8 | . 8 6 9 7 0 6 0 | . 0 3 9 7 7 8 7 |
| . 4 9 4 | . 4 4 3 5 0 4 3 | . 8 6 9 2 0 4 8 | . 0 4 0 0 0 0 8 |
| . 4 9 5 | . 4 4 4 2 0 4 7 | . 8 6 8 7 0 3 0 | . 0 4 0 2 2 3 5 |
| . 4 9 6 | . 4 4 4 9 0 4 1 | . 8 6 8 2 0 0 7 | . 0 4 0 4 4 6 8 |
| . 4 9 7 | . 4 4 5 6 0 2 1 | . 8 6 7 6 9 7 1 | . 0 4 0 6 7 1 1 |
| . 4 9 8 | . 4 4 6 2 9 9 3 | . 8 6 7 1 9 3 3 | . 0 4 0 8 9 5 7 |
| . 4 9 9 | . 4 4 6 9 9 5 1 | . 8 6 6 6 8 8 2 | . 0 4 1 1 2 1 3 |
| . 5 0 0 | . 4 4 7 6 8 9 8 | . 8 6 6 1 8 2 5 | . 0 4 1 3 4 7 5 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.501 | 0.4483834 | 0.8656759 | 0.0415745 |
| .502 | .4490759 | .8651687 | .0418021 |
| .503 | .4497672 | .8646606 | .0420305 |
| .504 | .4504574 | .8641520 | .0422594 |
| .505 | .4511464 | .8636424 | .0424891 |
| .506 | .4518342 | .8631319 | .0427196 |
| .507 | .4525210 | .8626209 | .0429507 |
| .508 | .4532065 | .8621089 | .0431825 |
| .509 | .4538908 | .8615960 | .0434152 |
| .510 | .4545741 | .8610826 | .0436484 |
| .511 | .4552561 | .8605682 | .0438824 |
| .512 | .4559370 | .8600534 | .0441169 |
| .513 | .4566168 | .8595375 | .0443523 |
| .514 | .4572954 | .8590212 | .0445882 |
| .515 | .4579727 | .8585036 | .0448251 |
| .516 | .4586491 | .8579858 | .0450624 |
| .517 | .4593241 | .8574667 | .0453007 |
| .518 | .4599980 | .8569471 | .0455395 |
| .519 | .4606708 | .8564269 | .0457790 |
| .520 | .4613422 | .8559055 | .0460194 |
| .521 | .4620127 | .8553839 | .0462602 |
| .522 | .4626818 | .8548610 | .0465019 |
| .523 | .4633498 | .8543376 | .0467442 |
| .524 | .4640166 | .8538134 | .0469873 |
| .525 | .4646823 | .8532885 | .0472311 |
| .526 | .4653468 | .8527628 | .0474755 |
| .527 | .4660101 | .8522366 | .0477206 |
| .528 | .4666722 | .8517094 | .0479664 |
| .529 | .4673331 | .8511814 | .0482130 |
| .530 | .4679929 | .8506589 | .0484602 |
| .531 | .4686514 | .8501234 | .0487081 |
| .532 | .4693086 | .8495931 | .0489568 |
| .533 | .4699648 | .8490622 | .0492061 |
| .534 | .4706197 | .8485305 | .0494562 |
| .535 | .4712735 | .8479983 | .0497069 |
| .536 | .4719260 | .8474651 | .0499583 |
| .537 | .4725774 | .8469315 | .0502103 |
| .538 | .4732274 | .8463966 | .0504633 |
| .539 | .4738765 | .8458616 | .0507166 |
| .540 | .4745241 | .8453253 | .0509709 |
| .541 | .4751706 | .8447885 | .0512258 |
| .542 | .4758160 | .8442512 | .0514813 |
| .543 | .4764600 | .8437127 | .0517377 |
| .544 | .4771030 | .8431740 | .0519945 |
| .545 | .4777446 | .8426341 | .0522523 |
| .546 | .4783850 | .8420937 | .0525106 |
| .547 | .4790242 | .8415524 | .0527698 |
| .548 | .4796623 | .8410107 | .0530294 |
| .549 | .4802991 | .8404680 | .0532899 |
| .550 | .4809347 | .8399249 | .0535509 |

TABLE III. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-------------|-------------|
| 0 . 551 | 0 . 4815691 | 0 . 8393809 | 0 . 0538127 |
| . 552 | . 4822023 | . 8388361 | . 0540753 |
| . 553 | . 4828341 | . 8382907 | . 0543384 |
| . 554 | . 4834648 | . 8377445 | . 0546023 |
| . 555 | . 4840941 | . 8371975 | . 0548670 |
| . 556 | . 4847224 | . 8366499 | . 0551322 |
| . 557 | . 4853493 | . 8361015 | . 0553982 |
| . 558 | . 4859751 | . 8355526 | . 0556648 |
| . 559 | . 4865996 | . 8350029 | . 0559321 |
| . 560 | . 4872230 | . 8344527 | . 0562000 |
| . 561 | . 4878449 | . 8339013 | . 0564689 |
| . 562 | . 4884659 | . 8333497 | . 0567381 |
| . 563 | . 4890854 | . 8327970 | . 0570083 |
| . 564 | . 4897037 | . 8322438 | . 0572790 |
| . 565 | . 4903209 | . 8316901 | . 0575503 |
| . 566 | . 4909366 | . 8311351 | . 0578226 |
| . 567 | . 4915513 | . 8305801 | . 0580952 |
| . 568 | . 4921646 | . 8300239 | . 0583688 |
| . 569 | . 4927767 | . 8294672 | . 0586430 |
| . 570 | . 4933874 | . 8289097 | . 0589179 |
| . 571 | . 4939971 | . 8283517 | . 0591933 |
| . 572 | . 4946054 | . 8277929 | . 0594696 |
| . 573 | . 4952126 | . 8272336 | . 0597464 |
| . 574 | . 4958184 | . 8266735 | . 0600239 |
| . 575 | . 4964229 | . 8261125 | . 0603022 |
| . 576 | . 4970263 | . 8255511 | . 0605811 |
| . 577 | . 4976284 | . 8249889 | . 0608607 |
| . 578 | . 4982291 | . 8244258 | . 0611410 |
| . 579 | . 4988286 | . 8238623 | . 0614220 |
| . 580 | . 4994268 | . 8232980 | . 0617036 |
| . 581 | . 5000239 | . 8227332 | . 0619859 |
| . 582 | . 5006196 | . 8221676 | . 0622689 |
| . 583 | . 5012142 | . 8216016 | . 0625524 |
| . 584 | . 5018073 | . 8210344 | . 0628369 |
| . 585 | . 5023993 | . 8204671 | . 0631217 |
| . 586 | . 5029899 | . 8198986 | . 0634075 |
| . 587 | . 5035793 | . 8193296 | . 0636938 |
| . 588 | . 5041675 | . 8187603 | . 0639807 |
| . 589 | . 5047542 | . 8181897 | . 0642685 |
| . 590 | . 5053399 | . 8176191 | . 0645567 |
| . 591 | . 5059240 | . 8170473 | . 0648458 |
| . 592 | . 5065071 | . 8164751 | . 0651355 |
| . 593 | . 5070887 | . 8159020 | . 0654259 |
| . 594 | . 5076692 | . 8153286 | . 0657169 |
| . 595 | . 5082483 | . 8147543 | . 0660086 |
| . 596 | . 5088263 | . 8141796 | . 0663008 |
| . 597 | . 5094028 | . 8136041 | . 0665938 |
| . 598 | . 5099781 | . 8130279 | . 0668876 |
| . 599 | . 5105521 | . 8124512 | . 0671818 |
| . 600 | . 5111248 | . 8118737 | . 0674768 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .601 | 0.5116962 | 0.8112954 | 0.0677726 |
| .602 | .5122663 | .8107166 | .0680689 |
| .603 | .5128351 | .8101371 | .0683659 |
| .604 | .5134027 | .8095572 | .0686635 |
| .605 | .5139689 | .8089765 | .0689618 |
| .606 | .5145339 | .8083954 | .0692606 |
| .607 | .5150974 | .8078131 | .0695604 |
| .608 | .5156599 | .8072308 | .0698605 |
| .609 | .5162208 | .8066474 | .0701615 |
| .610 | .5167806 | .8060635 | .0704631 |
| .611 | .5173391 | .8054792 | .0707652 |
| .612 | .5178961 | .8048938 | .0710682 |
| .613 | .5184520 | .8043083 | .0713716 |
| .614 | .5190065 | .8037217 | .0716759 |
| .615 | .5195597 | .8031347 | .0719807 |
| .616 | .5201115 | .8025470 | .0722862 |
| .617 | .5206621 | .8019588 | .0725923 |
| .618 | .5212113 | .8013699 | .0728991 |
| .619 | .5217594 | .8007805 | .0732064 |
| .620 | .5223060 | .8001904 | .0735145 |
| .621 | .5228513 | .7995996 | .0738232 |
| .622 | .5233953 | .7990083 | .0741325 |
| .623 | .5239380 | .7984163 | .0744425 |
| .624 | .5244793 | .7978236 | .0747533 |
| .625 | .5250193 | .7972304 | .0750645 |
| .626 | .5255580 | .7966365 | .0753765 |
| .627 | .5260955 | .7960422 | .0756890 |
| .628 | .5266315 | .7954472 | .0760022 |
| .629 | .5271664 | .7948518 | .0763159 |
| .630 | .5276996 | .7942553 | .0766305 |
| .631 | .5282318 | .7936587 | .0769455 |
| .632 | .5287625 | .7930611 | .0772614 |
| .633 | .5292919 | .7924630 | .0775777 |
| .634 | .5298201 | .7918646 | .0778946 |
| .635 | .5303467 | .7912651 | .0782124 |
| .636 | .5308723 | .7906656 | .0785305 |
| .637 | .5313963 | .7900650 | .0788495 |
| .638 | .5319190 | .7894640 | .0791691 |
| .639 | .5324404 | .7888623 | .0794893 |
| .640 | .5329605 | .7882602 | .0798100 |
| .641 | .5334792 | .7876574 | .0801314 |
| .642 | .5339967 | .7870542 | .0804534 |
| .643 | .5345128 | .7864503 | .0807760 |
| .644 | .5350274 | .7858456 | .0810994 |
| .645 | .5355409 | .7852406 | .0814232 |
| .646 | .5360529 | .7846349 | .0817478 |
| .647 | .5365635 | .7840285 | .0820730 |
| .648 | .5370728 | .7834217 | .0823987 |
| .649 | .5375807 | .7828142 | .0827252 |
| .650 | .5380874 | .7822063 | .0830521 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| v/v_{cr} | $\rho v / \rho' v_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 0.651 | 0.5385927 | 0.7815978 | 0.0833797 |
| .652 | .5390967 | .7809888 | .0837078 |
| .653 | .5395991 | .7803788 | .0840368 |
| .654 | .5401005 | .7797689 | .0843661 |
| .655 | .5406003 | .7791578 | .0846963 |
| .656 | .5410988 | .7785464 | .0850270 |
| .657 | .5415960 | .7779347 | .0853581 |
| .658 | .5420917 | .7773219 | .0856902 |
| .659 | .5425863 | .7767091 | .0860225 |
| .660 | .5430792 | .7760953 | .0863557 |
| .661 | .5435709 | .7754811 | .0866894 |
| .662 | .5440612 | .7748662 | .0870238 |
| .663 | .5445503 | .7742510 | .0873587 |
| .664 | .5450379 | .7736351 | .0876942 |
| .665 | .5455242 | .7730189 | .0880302 |
| .666 | .5460091 | .7724019 | .0883669 |
| .667 | .5464926 | .7717843 | .0887043 |
| .668 | .5469748 | .7711664 | .0890421 |
| .669 | .5474555 | .7705478 | .0893807 |
| .670 | .5479349 | .7699285 | .0897198 |
| .671 | .5484129 | .7693088 | .0900595 |
| .672 | .5488896 | .7686885 | .0903998 |
| .673 | .5493649 | .7680679 | .0907406 |
| .674 | .5498388 | .7674466 | .0910821 |
| .675 | .5503115 | .7668250 | .0914241 |
| .676 | .5507825 | .7662023 | .0917669 |
| .677 | .5512524 | .7655797 | .0921099 |
| .678 | .5517207 | .7649561 | .0924539 |
| .679 | .5521878 | .7643321 | .0927982 |
| .680 | .5526535 | .7637079 | .0931431 |
| .681 | .5531177 | .7630826 | .0934888 |
| .682 | .5535807 | .7624574 | .0938348 |
| .683 | .5540421 | .7618311 | .0941816 |
| .684 | .5545023 | .7612046 | .0945289 |
| .685 | .5549609 | .7605774 | .0948768 |
| .686 | .5554183 | .7599498 | .0952252 |
| .687 | .5558743 | .7593217 | .0955742 |
| .688 | .5563289 | .7586932 | .0959237 |
| .689 | .5567822 | .7580641 | .0962739 |
| .690 | .5572339 | .7574343 | .0966247 |
| .691 | .5576844 | .7568042 | .0969759 |
| .692 | .5581334 | .7561735 | .0973278 |
| .693 | .5585809 | .7555422 | .0976803 |
| .694 | .5590272 | .7549105 | .0980333 |
| .695 | .5594720 | .7542783 | .0983869 |
| .696 | .5599155 | .7536457 | .0987409 |
| .697 | .5603575 | .7530125 | .0990956 |
| .698 | .5607983 | .7523790 | .0994507 |
| .699 | .5612374 | .7517445 | .0998067 |
| .700 | .5616754 | .7511101 | .1001629 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|----------|
| .701 | .5621117 | .7504747 | .1005199 |
| .702 | .5625468 | .7498390 | .1008774 |
| .703 | .5629806 | .7492030 | .1012353 |
| .704 | .5634127 | .7485661 | .1015940 |
| .705 | .5638437 | .7479298 | .1019529 |
| .706 | .5642731 | .7472914 | .1023127 |
| .707 | .5647011 | .7466533 | .1026729 |
| .708 | .5651277 | .7460146 | .1030337 |
| .709 | .5655530 | .7453756 | .1033950 |
| .710 | .5659768 | .7447360 | .1037568 |
| .711 | .5663993 | .7440961 | .1041191 |
| .712 | .5668203 | .7434556 | .1044820 |
| .713 | .5672399 | .7428145 | .1048456 |
| .714 | .5676581 | .7421732 | .1052095 |
| .715 | .5680749 | .7415312 | .1055740 |
| .716 | .5684902 | .7408887 | .1059392 |
| .717 | .5689042 | .7402458 | .1063048 |
| .718 | .5693167 | .7396024 | .1066710 |
| .719 | .5697279 | .7389587 | .1070376 |
| .720 | .5701376 | .7383144 | .1074048 |
| .721 | .5705460 | .7376699 | .1077724 |
| .722 | .5709527 | .7370244 | .1081408 |
| .723 | .5713584 | .7363790 | .1085094 |
| .724 | .5717623 | .7357327 | .1088788 |
| .725 | .5721650 | .7350861 | .1092486 |
| .726 | .5725663 | .7344393 | .1096188 |
| .727 | .5729559 | .7337916 | .1099898 |
| .728 | .5733645 | .7331439 | .1103610 |
| .729 | .5737613 | .7324954 | .1107330 |
| .730 | .5741569 | .7318466 | .1111054 |
| .731 | .5745509 | .7311972 | .1114784 |
| .732 | .5749437 | .7305475 | .1118518 |
| .733 | .5753349 | .7298973 | .1122257 |
| .734 | .5757248 | .7292469 | .1126001 |
| .735 | .5761133 | .7285959 | .1129750 |
| .736 | .5765002 | .7279443 | .1133505 |
| .737 | .5768858 | .7272925 | .1137264 |
| .738 | .5772700 | .7266401 | .1141029 |
| .739 | .5776526 | .7259872 | .1144799 |
| .740 | .5780339 | .7253340 | .1148574 |
| .741 | .5784137 | .7246803 | .1152354 |
| .742 | .5787922 | .7240263 | .1156138 |
| .743 | .5791691 | .7233718 | .1159927 |
| .744 | .5795448 | .7227171 | .1163720 |
| .745 | .5799188 | .7220614 | .1167521 |
| .746 | .5802916 | .7214059 | .1171324 |
| .747 | .5806627 | .7207495 | .1175134 |
| .748 | .5810326 | .7200929 | .1178948 |
| .749 | .5814011 | .7194361 | .1182765 |
| .750 | .5817679 | .7187784 | .1186591 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .751 | 0.5821336 | 0.7181208 | 0.1190417 |
| .752 | .5824975 | .7174623 | .1194252 |
| .753 | .5828602 | .7168037 | .1198090 |
| .754 | .5832213 | .7161445 | .1201933 |
| .755 | .5835811 | .7154851 | .1205780 |
| .756 | .5839394 | .7148251 | .1209633 |
| .757 | .5842964 | .7141650 | .1213489 |
| .758 | .5846519 | .7135043 | .1217350 |
| .759 | .5850058 | .7128431 | .1221217 |
| .760 | .5853584 | .7121817 | .1225088 |
| .761 | .5857096 | .7115197 | .1228963 |
| .762 | .5860591 | .7108573 | .1232845 |
| .763 | .5864074 | .7101946 | .1236729 |
| .764 | .5867541 | .7095314 | .1240619 |
| .765 | .5870996 | .7088681 | .1244513 |
| .766 | .5874435 | .7082042 | .1248412 |
| .767 | .5877860 | .7075401 | .1252314 |
| .768 | .5881269 | .7068752 | .1256223 |
| .769 | .5884666 | .7062104 | .1260134 |
| .770 | .5888046 | .7055448 | .1264052 |
| .771 | .5891413 | .7048790 | .1267973 |
| .772 | .5894766 | .7042130 | .1271898 |
| .773 | .5898102 | .7035462 | .1275830 |
| .774 | .5901427 | .7028796 | .1279763 |
| .775 | .5904735 | .7022121 | .1283703 |
| .776 | .5908029 | .7015444 | .1287647 |
| .777 | .5911308 | .7008763 | .1291595 |
| .778 | .5914574 | .7002079 | .1295547 |
| .779 | .5917824 | .6995391 | .1299504 |
| .780 | .5921061 | .6988701 | .1303464 |
| .781 | .5924283 | .6982006 | .1307429 |
| .782 | .5927490 | .6975306 | .1311400 |
| .783 | .5930683 | .6968605 | .1315373 |
| .784 | .5933861 | .6961898 | .1319351 |
| .785 | .5937023 | .6955187 | .1323335 |
| .786 | .5940172 | .6948474 | .1327321 |
| .787 | .5943306 | .6941757 | .1331313 |
| .788 | .5946427 | .6935038 | .1335307 |
| .789 | .5949532 | .6928314 | .1339307 |
| .790 | .5952624 | .6921588 | .1343309 |
| .791 | .5955698 | .6914855 | .1347318 |
| .792 | .5958762 | .6908123 | .1351328 |
| .793 | .5961807 | .6901383 | .1355345 |
| .794 | .5964839 | .6894642 | .1359365 |
| .795 | .5967859 | .6887900 | .1363388 |
| .796 | .5970860 | .6881149 | .1367418 |
| .797 | .5973850 | .6874400 | .1371448 |
| .798 | .5976823 | .6867644 | .1375486 |
| .799 | .5979783 | .6860886 | .1379526 |
| .800 | .5982727 | .6854123 | .1383571 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .801 | 0.5985657 | 0.6847359 | 0.1387618 |
| .802 | .5988572 | .6840591 | .1391671 |
| .803 | .5991474 | .6833821 | .1395726 |
| .804 | .5994361 | .6827047 | .1399785 |
| .805 | .5997232 | .6820268 | .1403850 |
| .806 | .6000089 | .6813488 | .1407917 |
| .807 | .6002932 | .6806703 | .1411989 |
| .808 | .6005758 | .6799914 | .1416065 |
| .809 | .6008572 | .6793124 | .1420144 |
| .810 | .6011370 | .6786329 | .1424228 |
| .811 | .6014154 | .6779533 | .1428314 |
| .812 | .6016923 | .6772733 | .1432405 |
| .813 | .6019679 | .6765932 | .1436498 |
| .814 | .6022417 | .6759123 | .1440598 |
| .815 | .6025144 | .6752316 | .1444698 |
| .816 | .6027853 | .6745501 | .1448805 |
| .817 | .6030548 | .6738685 | .1452914 |
| .818 | .6033231 | .6731869 | .1457026 |
| .819 | .6035896 | .6725045 | .1461144 |
| .820 | .6038549 | .6718222 | .1465263 |
| .821 | .6041185 | .6711393 | .1469388 |
| .822 | .6043807 | .6704563 | .1473515 |
| .823 | .6046414 | .6697728 | .1477647 |
| .824 | .6049008 | .6690892 | .1481781 |
| .825 | .6051586 | .6684052 | .1485919 |
| .826 | .6054151 | .6677211 | .1490060 |
| .827 | .6056700 | .6670366 | .1494205 |
| .828 | .6059233 | .6663517 | .1498354 |
| .829 | .6061753 | .6656667 | .1502505 |
| .830 | .6064258 | .6649813 | .1506661 |
| .831 | .6066747 | .6642955 | .1510821 |
| .832 | .6069222 | .6636096 | .1514983 |
| .833 | .6071682 | .6629233 | .1519149 |
| .834 | .6074129 | .6622369 | .1523317 |
| .835 | .6076560 | .6615501 | .1527490 |
| .836 | .6078978 | .6608632 | .1531665 |
| .837 | .6081378 | .6601756 | .1535845 |
| .838 | .6083767 | .6594883 | .1540026 |
| .839 | .6086138 | .6588002 | .1544213 |
| .840 | .6088495 | .6581121 | .1548402 |
| .841 | .6090839 | .6574239 | .1552593 |
| .842 | .6093166 | .6567350 | .1556790 |
| .843 | .6095481 | .6560463 | .1560986 |
| .844 | .6097778 | .6553570 | .1565189 |
| .845 | .6100062 | .6546675 | .1569394 |
| .846 | .6102330 | .6539777 | .1573603 |
| .847 | .6104585 | .6532878 | .1577813 |
| .848 | .6106825 | .6525976 | .1582028 |
| .849 | .6109051 | .6519073 | .1586244 |
| .850 | .6111261 | .6512166 | .1590465 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | ρ/ρ' | A |
|------------|-----------------------|--------------|-----------|
| 0.851 | 0.6113455 | 0.6505255 | 0.1594689 |
| .852 | .6115637 | .6498344 | .1598914 |
| .853 | .6117802 | .6491429 | .1603144 |
| .854 | .6119952 | .6484511 | .1607377 |
| .855 | .6122089 | .6477592 | .1611613 |
| .856 | .6124210 | .6470669 | .1615851 |
| .857 | .6126318 | .6463746 | .1620092 |
| .858 | .6128410 | .6456819 | .1624336 |
| .859 | .6130488 | .6449892 | .1628582 |
| .860 | .6132549 | .6442958 | .1632834 |
| .861 | .6134598 | .6436027 | .1637085 |
| .862 | .6136630 | .6429090 | .1641342 |
| .863 | .6138648 | .6422151 | .1645600 |
| .864 | .6140653 | .6415213 | .1649860 |
| .865 | .6142640 | .6408268 | .1654126 |
| .866 | .6144616 | .6401325 | .1658391 |
| .867 | .6146574 | .6394376 | .1662662 |
| .868 | .6148518 | .6387427 | .1666934 |
| .869 | .6150447 | .6380474 | .1671209 |
| .870 | .6152362 | .6373521 | .1675486 |
| .871 | .6154262 | .6366565 | .1679767 |
| .872 | .6156148 | .6359608 | .1684049 |
| .873 | .6158019 | .6352649 | .1688334 |
| .874 | .6159874 | .6345685 | .1692623 |
| .875 | .6161716 | .6338722 | .1696913 |
| .876 | .6163542 | .6331755 | .1701206 |
| .877 | .6165352 | .6324785 | .1705503 |
| .878 | .6167149 | .6317815 | .1709800 |
| .879 | .6168930 | .6310842 | .1714102 |
| .880 | .6170698 | .6303868 | .1718404 |
| .881 | .6172450 | .6296891 | .1722710 |
| .882 | .6174187 | .6289912 | .1727019 |
| .883 | .6175910 | .6282932 | .1731329 |
| .884 | .6177620 | .6275951 | .1735640 |
| .885 | .6179312 | .6268965 | .1739957 |
| .886 | .6180990 | .6261979 | .1744274 |
| .887 | .6182655 | .6254993 | .1748593 |
| .888 | .6184302 | .6248000 | .1752917 |
| .889 | .6185936 | .6241008 | .1757242 |
| .890 | .6187556 | .6234016 | .1761568 |
| .891 | .6189161 | .6227020 | .1765897 |
| .892 | .6190750 | .6220022 | .1770229 |
| .893 | .6192325 | .6213023 | .1774562 |
| .894 | .6193885 | .6206022 | .1778898 |
| .895 | .6195432 | .6199021 | .1783235 |
| .896 | .6196963 | .6192017 | .1787575 |
| .897 | .6198478 | .6185010 | .1791918 |
| .898 | .6199980 | .6178003 | .1796261 |
| .899 | .6201466 | .6170993 | .1800608 |
| .900 | .6202936 | .6163980 | .1804957 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| .901 | 0.6204393 | 0.6156968 | 0.1809307 |
| .902 | .6205835 | .6149953 | .1813661 |
| .903 | .6207263 | .6142938 | .1818014 |
| .904 | .6208675 | .6135920 | .1822371 |
| .905 | .6210072 | .6128899 | .1826731 |
| .906 | .6211455 | .6121879 | .1831091 |
| .907 | .6212825 | .6114859 | .1835452 |
| .908 | .6214178 | .6107833 | .1839817 |
| .909 | .6215516 | .6100808 | .1844183 |
| .910 | .6216842 | .6093782 | .1848550 |
| .911 | .6218149 | .6086752 | .1852922 |
| .912 | .6219443 | .6079721 | .1857294 |
| .913 | .6220724 | .6072691 | .1861667 |
| .914 | .6221989 | .6065658 | .1866042 |
| .915 | .6223238 | .6058623 | .1870420 |
| .916 | .6224474 | .6051588 | .1874798 |
| .917 | .6225695 | .6044551 | .1879179 |
| .918 | .6226902 | .6037514 | .1883560 |
| .919 | .6228093 | .6030474 | .1887944 |
| .920 | .6229269 | .6023432 | .1892330 |
| .921 | .6230431 | .6016391 | .1896717 |
| .922 | .6231578 | .6009347 | .1901106 |
| .923 | .6232709 | .6002300 | .1905498 |
| .924 | .6233827 | .5995254 | .1909890 |
| .925 | .6234929 | .5988206 | .1914284 |
| .926 | .6236018 | .5981158 | .1918678 |
| .927 | .6237091 | .5974108 | .1923075 |
| .928 | .6238149 | .5967055 | .1927474 |
| .929 | .6239193 | .5960003 | .1931874 |
| .930 | .6240224 | .5952952 | .1936274 |
| .931 | .6241237 | .5945896 | .1940677 |
| .932 | .6242237 | .5938840 | .1945081 |
| .933 | .6243223 | .5931785 | .1949486 |
| .934 | .6244191 | .5924724 | .1953894 |
| .935 | .6245147 | .5917665 | .1958303 |
| .936 | .6246089 | .5910606 | .1962711 |
| .937 | .6247015 | .5903544 | .1967122 |
| .938 | .6247925 | .5896481 | .1971535 |
| .939 | .6248823 | .5889418 | .1975948 |
| .940 | .6249705 | .5882354 | .1980363 |
| .941 | .6250573 | .5875290 | .1984778 |
| .942 | .6251426 | .5868224 | .1989195 |
| .943 | .6252263 | .5861155 | .1993614 |
| .944 | .6253087 | .5854088 | .1998033 |
| .945 | .6253896 | .5847019 | .2002454 |
| .946 | .6254688 | .5839947 | .2006877 |
| .947 | .6255468 | .5832877 | .2011299 |
| .948 | .6256232 | .5825804 | .2015724 |
| .949 | .6256983 | .5818732 | .2020148 |
| .950 | .6257718 | .5811659 | .2024574 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 0.951 | 0.6258438 | 0.5804583 | 0.2029002 |
| .952 | .6259144 | .5797508 | .2033430 |
| .953 | .6259837 | .5790435 | .2037858 |
| .954 | .6260512 | .5783356 | .2042289 |
| .955 | .6261174 | .5776279 | .2046720 |
| .956 | .6261823 | .5769202 | .2051151 |
| .957 | .6262454 | .5762121 | .2055586 |
| .958 | .6263071 | .5755041 | .2060020 |
| .959 | .6263676 | .5747962 | .2064454 |
| .960 | .6264265 | .5740881 | .2068889 |
| .961 | .6264838 | .5733798 | .2073326 |
| .962 | .6265398 | .5726717 | .2077763 |
| .963 | .6265943 | .5719633 | .2082201 |
| .964 | .6266474 | .5712551 | .2086639 |
| .965 | .6266990 | .5705467 | .2091078 |
| .966 | .6267491 | .5698382 | .2095519 |
| .967 | .6267978 | .5691297 | .2099959 |
| .968 | .6268450 | .5684211 | .2104401 |
| .969 | .6268906 | .5677124 | .2108844 |
| .970 | .6269349 | .5670037 | .2113287 |
| .971 | .6269776 | .5662949 | .2117730 |
| .972 | .6270191 | .5655862 | .2122174 |
| .973 | .6270590 | .5648774 | .2126619 |
| .974 | .6270973 | .5641684 | .2131065 |
| .975 | .6271343 | .5634595 | .2135510 |
| .976 | .6271700 | .5627508 | .2139955 |
| .977 | .6272040 | .5620416 | .2144403 |
| .978 | .6272366 | .5613326 | .2148850 |
| .979 | .6272679 | .5606237 | .2153296 |
| .980 | .6272974 | .5599144 | .2157746 |
| .981 | .6273256 | .5592052 | .2162195 |
| .982 | .6273525 | .5584962 | .2166643 |
| .983 | .6273779 | .5577870 | .2171092 |
| .984 | .6274017 | .5570777 | .2175542 |
| .985 | .6274241 | .5563685 | .2179992 |
| .986 | .6274451 | .5556592 | .2184442 |
| .987 | .6274648 | .5549500 | .2188892 |
| .988 | .6274829 | .5542407 | .2193342 |
| .989 | .6274994 | .5535313 | .2197794 |
| .990 | .6275147 | .5528220 | .2203245 |
| .991 | .6275284 | .5521126 | .2206696 |
| .992 | .6275406 | .5514031 | .2211149 |
| .993 | .6275515 | .5506937 | .2215600 |
| .994 | .6275608 | .5499842 | .22220053 |
| .995 | .6275688 | .5492749 | .2224504 |
| .996 | .6275753 | .5485655 | .2228956 |
| .997 | .6275803 | .5478559 | .2233409 |
| .998 | .6275839 | .5471465 | .2237862 |
| .999 | .6275863 | .5464373 | .2242313 |
| 1.000 | .6275868 | .5457277 | .2246766 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.001 | .6275861 | 0.5450182 | 0.2251218 |
| 1.002 | .6275841 | .5443090 | .2255670 |
| 1.003 | .6275803 | .5435993 | .2260123 |
| 1.004 | .6275752 | .5428898 | .2264576 |
| 1.005 | .6275688 | .5421805 | .2269027 |
| 1.006 | .6275609 | .5414711 | .2273479 |
| 1.007 | .6275515 | .5407616 | .2277932 |
| 1.008 | .6275407 | .5400523 | .2282383 |
| 1.009 | .6275284 | .5393428 | .2286835 |
| 1.010 | .6275149 | .5386336 | .2291286 |
| 1.011 | .6274998 | .5379243 | .2295737 |
| 1.012 | .6274831 | .5372149 | .2300188 |
| 1.013 | .6274652 | .5365056 | .2304639 |
| 1.014 | .6274458 | .5357963 | .2309089 |
| 1.015 | .6274248 | .5350869 | .2313540 |
| 1.016 | .6274025 | .5343777 | .2317990 |
| 1.017 | .6273787 | .5336684 | .2322440 |
| 1.018 | .6273536 | .5329593 | .2326889 |
| 1.019 | .6273270 | .5322501 | .2331338 |
| 1.020 | .6272989 | .5315408 | .2335787 |
| 1.021 | .6272695 | .5308318 | .2340235 |
| 1.022 | .6272387 | .5301229 | .2344681 |
| 1.023 | .6272063 | .5294137 | .2349130 |
| 1.024 | .6271725 | .5287047 | .2353576 |
| 1.025 | .6271375 | .5279959 | .2358022 |
| 1.026 | .6271007 | .5272868 | .2362469 |
| 1.027 | .6270626 | .5265779 | .2366914 |
| 1.028 | .6270233 | .5258692 | .2371358 |
| 1.029 | .6269824 | .5251604 | .2375802 |
| 1.030 | .6269400 | .5244516 | .2380246 |
| 1.031 | .6268963 | .5237429 | .2384689 |
| 1.032 | .6268512 | .5230343 | .2389131 |
| 1.033 | .6268047 | .5223258 | .2393572 |
| 1.034 | .6267567 | .5216173 | .2398013 |
| 1.035 | .6267072 | .5209087 | .2402454 |
| 1.036 | .6266564 | .5202004 | .2406893 |
| 1.037 | .6266042 | .5194920 | .2411332 |
| 1.038 | .6265504 | .5187836 | .2415771 |
| 1.039 | .6264953 | .5180754 | .2420208 |
| 1.040 | .6264387 | .5173671 | .2424645 |
| 1.041 | .6263809 | .5166591 | .2429080 |
| 1.042 | .6263215 | .5159510 | .2433515 |
| 1.043 | .6262609 | .5152432 | .2437948 |
| 1.044 | .6261985 | .5145351 | .2442382 |
| 1.045 | .6261351 | .5138274 | .2446813 |
| 1.046 | .6260700 | .5131195 | .2451246 |
| 1.047 | .6260035 | .5124118 | .2455676 |
| 1.048 | .6259359 | .5117044 | .2460104 |
| 1.049 | .6258664 | .5109966 | .2464534 |
| 1.050 | .6257960 | .5102894 | .2468960 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.051 | 0.6257238 | 0.5095818 | 0.2473388 |
| 1.052 | .6256503 | .5088746 | .2477813 |
| 1.053 | .6255754 | .5081673 | .2482238 |
| 1.054 | .6254992 | .5074602 | .2486661 |
| 1.055 | .6254215 | .5067531 | .2491084 |
| 1.056 | .6253425 | .5060463 | .2495504 |
| 1.057 | .6252620 | .5053394 | .2499924 |
| 1.058 | .6251801 | .5046326 | .2504343 |
| 1.059 | .6250968 | .5039260 | .2508761 |
| 1.060 | .6250121 | .5032194 | .2513177 |
| 1.061 | .6249259 | .5025128 | .2517593 |
| 1.062 | .6248385 | .5018064 | .2522007 |
| 1.063 | .6247495 | .5011001 | .2526420 |
| 1.064 | .6246593 | .5003940 | .2530832 |
| 1.065 | .6245676 | .4996879 | .2535242 |
| 1.066 | .6244746 | .4989820 | .2539650 |
| 1.067 | .6243800 | .4982759 | .2544059 |
| 1.068 | .6242843 | .4975704 | .2548464 |
| 1.069 | .6241869 | .4968646 | .2552870 |
| 1.070 | .6240882 | .4961590 | .2557274 |
| 1.071 | .6239883 | .4954537 | .2561675 |
| 1.072 | .6238867 | .4947482 | .2566077 |
| 1.073 | .6237841 | .4940432 | .2570475 |
| 1.074 | .6236797 | .4933380 | .2574873 |
| 1.075 | .6235741 | .4926330 | .2579270 |
| 1.076 | .6234671 | .4919281 | .2583665 |
| 1.077 | .6233588 | .4912234 | .2588058 |
| 1.078 | .6232490 | .4905188 | .2592450 |
| 1.079 | .6231379 | .4898144 | .2596840 |
| 1.080 | .6230254 | .4891101 | .2601228 |
| 1.081 | .6229115 | .4884058 | .2605616 |
| 1.082 | .6227962 | .4877018 | .2610001 |
| 1.083 | .6226796 | .4869978 | .2614385 |
| 1.084 | .6225614 | .4862939 | .2618768 |
| 1.085 | .6224420 | .4855902 | .2623148 |
| 1.086 | .6223211 | .4848866 | .2627527 |
| 1.087 | .6221990 | .4841832 | .2631904 |
| 1.088 | .6220755 | .4834799 | .2636279 |
| 1.089 | .6219507 | .4827769 | .2640652 |
| 1.090 | .6218242 | .4820737 | .2645025 |
| 1.091 | .6216967 | .4813710 | .2649394 |
| 1.092 | .6215675 | .4806682 | .2653764 |
| 1.093 | .6214371 | .4799656 | .2658130 |
| 1.094 | .6213055 | .4792633 | .2662494 |
| 1.095 | .6211721 | .4785609 | .2666858 |
| 1.096 | .6210378 | .4778590 | .2671217 |
| 1.097 | .6209018 | .4771568 | .2675577 |
| 1.098 | .6207645 | .4764551 | .2679934 |
| 1.099 | .6206258 | .4757533 | .2684290 |
| 1.100 | .6204859 | .4750519 | .2688643 |

TABLE III. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.101 | 0.6203446 | 0.4743505 | 0.2692994 |
| 1.102 | .6202020 | .4736495 | .2697343 |
| 1.103 | .6200580 | .4729485 | .2701690 |
| 1.104 | .6199125 | .4722475 | .2706035 |
| 1.105 | .6197658 | .4715469 | .2710378 |
| 1.106 | .6196176 | .4708464 | .2714719 |
| 1.107 | .6194680 | .4701459 | .2719059 |
| 1.108 | .6193172 | .4694457 | .2723396 |
| 1.109 | .6191650 | .4687457 | .2727731 |
| 1.110 | .6190115 | .4680459 | .2732063 |
| 1.111 | .6188566 | .4673462 | .2736394 |
| 1.112 | .6187005 | .4666469 | .2740721 |
| 1.113 | .6185427 | .4659474 | .2745048 |
| 1.114 | .6183839 | .4652484 | .2749371 |
| 1.115 | .6182235 | .4645493 | .2753694 |
| 1.116 | .6180619 | .4638506 | .2758013 |
| 1.117 | .6178991 | .4631521 | .2762329 |
| 1.118 | .6177345 | .4624535 | .2766645 |
| 1.119 | .6175691 | .4617555 | .2770957 |
| 1.120 | .6174019 | .4610574 | .2775268 |
| 1.121 | .6172336 | .4603595 | .2779576 |
| 1.122 | .6170638 | .4596618 | .2783882 |
| 1.123 | .6168929 | .4589644 | .2788184 |
| 1.124 | .6167205 | .4582671 | .2792485 |
| 1.125 | .6165469 | .4575702 | .2796783 |
| 1.126 | .6163719 | .4568733 | .2801079 |
| 1.127 | .6161955 | .4561766 | .2805372 |
| 1.128 | .6160179 | .4554802 | .2809663 |
| 1.129 | .6158388 | .4547839 | .2813952 |
| 1.130 | .6156584 | .4540877 | .2818238 |
| 1.131 | .6154767 | .4533919 | .2822522 |
| 1.132 | .6152937 | .4526962 | .2826803 |
| 1.133 | .6151094 | .4520008 | .2831081 |
| 1.134 | .6149238 | .4513056 | .2835357 |
| 1.135 | .6147369 | .4506107 | .2839629 |
| 1.136 | .6145484 | .4499157 | .2843901 |
| 1.137 | .6143590 | .4492212 | .2848168 |
| 1.138 | .6141679 | .4485267 | .2852434 |
| 1.139 | .6139757 | .4478325 | .2856697 |
| 1.140 | .6137822 | .4471387 | .2860956 |
| 1.141 | .6135872 | .4464448 | .2865214 |
| 1.142 | .6133911 | .4457515 | .2869468 |
| 1.143 | .6131935 | .4450581 | .2873721 |
| 1.144 | .6129947 | .4443650 | .2877970 |
| 1.145 | .6127944 | .4436721 | .2882217 |
| 1.146 | .6125931 | .4429796 | .2886460 |
| 1.147 | .6123903 | .4422872 | .2890701 |
| 1.148 | .6121863 | .4415951 | .2894938 |
| 1.149 | .6119810 | .4409032 | .2899173 |
| 1.150 | .6117742 | .4402115 | .2903406 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.151 | 0.6115663 | 0.4395201 | 0.2907635 |
| 1.152 | .6113570 | .4388288 | .2911861 |
| 1.153 | .6111463 | .4381377 | .2916086 |
| 1.154 | .6109345 | .4374470 | .2920306 |
| 1.155 | .6107212 | .4367565 | .2924524 |
| 1.156 | .6105069 | .4360663 | .2928739 |
| 1.157 | .6102911 | .4353763 | .2932951 |
| 1.158 | .6100741 | .4346866 | .2937159 |
| 1.159 | .6098556 | .4339969 | .2941366 |
| 1.160 | .6096361 | .4333078 | .2945567 |
| 1.161 | .6094150 | .4326187 | .2949768 |
| 1.162 | .6091928 | .4319299 | .2953965 |
| 1.163 | .6089694 | .4312415 | .2958158 |
| 1.164 | .6087445 | .4305530 | .2962349 |
| 1.165 | .6085186 | .4298652 | .2966536 |
| 1.166 | .6082911 | .4291773 | .2970721 |
| 1.167 | .6080624 | .4284898 | .2974902 |
| 1.168 | .6078324 | .4278025 | .2979081 |
| 1.169 | .6076013 | .4271156 | .2983255 |
| 1.170 | .6073687 | .4264288 | .2987427 |
| 1.171 | .6071351 | .4257425 | .2991595 |
| 1.172 | .6069001 | .4250563 | .2995760 |
| 1.173 | .6066637 | .4243703 | .2999923 |
| 1.174 | .6064262 | .4236847 | .3004081 |
| 1.175 | .6061873 | .4229993 | .3008237 |
| 1.176 | .6059470 | .4223141 | .3012390 |
| 1.177 | .6057057 | .4216293 | .3016538 |
| 1.178 | .6054629 | .4209446 | .3020685 |
| 1.179 | .6052191 | .4202604 | .3024826 |
| 1.180 | .6049739 | .4195764 | .3028965 |
| 1.181 | .6047276 | .4188927 | .3033100 |
| 1.182 | .6044797 | .4182091 | .3037234 |
| 1.183 | .6042309 | .4175261 | .3041362 |
| 1.184 | .6039805 | .4168431 | .3045488 |
| 1.185 | .6037290 | .4161604 | .3049610 |
| 1.186 | .6034764 | .4154782 | .3053728 |
| 1.187 | .6032222 | .4147960 | .3057844 |
| 1.188 | .6029671 | .4141144 | .3061954 |
| 1.189 | .6027105 | .4134328 | .3066063 |
| 1.190 | .6024527 | .4127517 | .3070168 |
| 1.191 | .6021937 | .4120707 | .3074269 |
| 1.192 | .6019335 | .4113902 | .3078367 |
| 1.193 | .6016719 | .4107098 | .3082461 |
| 1.194 | .6014093 | .4100299 | .3086551 |
| 1.195 | .6011454 | .4093503 | .3090637 |
| 1.196 | .6008801 | .4086708 | .3094721 |
| 1.197 | .6006137 | .4079917 | .3098801 |
| 1.198 | .6003459 | .4073129 | .3102877 |
| 1.199 | .6000769 | .4066343 | .3106950 |
| 1.200 | .5998067 | .4059562 | .3111018 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|---------------|---------------|
| 1 . 201 | 0 . 599 535 3 | 0 . 405 278 2 | 0 . 311 508 4 |
| 1 . 202 | .599 262 7 | .404 600 7 | .311 914 5 |
| 1 . 203 | .598 988 8 | .403 923 4 | .312 320 3 |
| 1 . 204 | .598 713 9 | .403 246 6 | .312 725 6 |
| 1 . 205 | .598 437 4 | .402 569 8 | .313 130 7 |
| 1 . 206 | .598 160 0 | .401 893 6 | .313 535 3 |
| 1 . 207 | .597 881 1 | .401 217 4 | .313 939 6 |
| 1 . 208 | .597 601 1 | .400 541 7 | .314 343 5 |
| 1 . 209 | .597 320 0 | .399 866 5 | .314 747 0 |
| 1 . 210 | .597 037 3 | .399 191 2 | .315 150 2 |
| 1 . 211 | .596 753 9 | .398 516 6 | .315 552 8 |
| 1 . 212 | .596 468 9 | .397 842 1 | .315 955 3 |
| 1 . 213 | .596 182 8 | .397 168 0 | .316 357 3 |
| 1 . 214 | .595 895 4 | .396 494 1 | .316 758 9 |
| 1 . 215 | .595 607 0 | .395 820 7 | .317 160 1 |
| 1 . 216 | .595 317 2 | .395 147 6 | .317 560 9 |
| 1 . 217 | .595 026 4 | .394 474 9 | .317 961 3 |
| 1 . 218 | .594 734 3 | .393 802 4 | .318 361 3 |
| 1 . 219 | .594 440 8 | .393 130 2 | .318 761 0 |
| 1 . 220 | .594 146 4 | .392 458 5 | .319 160 2 |
| 1 . 221 | .593 850 6 | .391 787 0 | .319 559 1 |
| 1 . 222 | .593 553 5 | .391 111 5 7 | .319 957 6 |
| 1 . 223 | .593 255 4 | .390 444 9 | .320 355 7 |
| 1 . 224 | .592 956 0 | .389 774 4 | .320 753 3 |
| 1 . 225 | .592 655 5 | .389 104 4 | .321 150 6 |
| 1 . 226 | .592 353 8 | .388 434 6 | .321 547 4 |
| 1 . 227 | .592 051 0 | .387 765 3 | .321 943 8 |
| 1 . 228 | .591 746 6 | .387 096 0 | .322 339 9 |
| 1 . 229 | .591 441 5 | .386 427 4 | .322 735 5 |
| 1 . 230 | .591 134 8 | .385 758 8 | .323 130 8 |
| 1 . 231 | .590 827 1 | .385 090 8 | .323 525 6 |
| 1 . 232 | .590 518 4 | .384 423 2 | .323 919 9 |
| 1 . 233 | .590 208 2 | .383 755 7 | .324 314 0 |
| 1 . 234 | .589 897 1 | .383 088 8 | .324 707 5 |
| 1 . 235 | .589 584 6 | .382 422 0 | .325 100 7 |
| 1 . 236 | .589 271 0 | .381 755 7 | .325 493 5 |
| 1 . 237 | .588 956 1 | .381 089 7 | .325 885 8 |
| 1 . 238 | .588 640 2 | .380 424 2 | .326 277 7 |
| 1 . 239 | .588 323 1 | .379 758 9 | .326 669 2 |
| 1 . 240 | .588 004 9 | .379 094 1 | .327 060 2 |
| 1 . 241 | .587 685 5 | .378 429 6 | .327 450 8 |
| 1 . 242 | .587 364 7 | .377 765 4 | .327 841 1 |
| 1 . 243 | .587 043 0 | .377 101 7 | .328 230 8 |
| 1 . 244 | .586 720 0 | .376 438 2 | .328 620 2 |
| 1 . 245 | .586 395 8 | .375 775 0 | .329 009 2 |
| 1 . 246 | .586 070 5 | .375 112 4 | .329 397 7 |
| 1 . 247 | .585 744 0 | .374 450 0 | .329 785 8 |
| 1 . 248 | .585 416 5 | .373 788 1 | .330 173 3 |
| 1 . 249 | .585 087 7 | .373 126 5 | .330 560 5 |
| 1 . 250 | .584 757 9 | .372 465 4 | .330 947 2 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-------------|-------------|
| 1 . 251 | 0 . 5844266 | 0 . 3718044 | 0 . 3313337 |
| 1 . 252 | .5840946 | .3714441 | .3317194 |
| 1 . 253 | .5837611 | .3704839 | .3321050 |
| 1 . 254 | .5834265 | .3698241 | .3324900 |
| 1 . 255 | .5830910 | .3691649 | .3328745 |
| 1 . 256 | .5827540 | .3685058 | .3332587 |
| 1 . 257 | .5824163 | .3678474 | .3336422 |
| 1 . 258 | .5820770 | .3671891 | .3340255 |
| 1 . 259 | .5817368 | .3665313 | .3344083 |
| 1 . 260 | .5813954 | .3658738 | .3347907 |
| 1 . 261 | .5810529 | .3652168 | .3351725 |
| 1 . 262 | .5807092 | .3645602 | .3355540 |
| 1 . 263 | .5803646 | .3639040 | .3359349 |
| 1 . 264 | .5800187 | .3632481 | .3363154 |
| 1 . 265 | .5796716 | .3625926 | .3366955 |
| 1 . 266 | .5793235 | .3619376 | .3370751 |
| 1 . 267 | .5789742 | .3612829 | .3374543 |
| 1 . 268 | .5786237 | .3606285 | .3378331 |
| 1 . 269 | .5782722 | .3599746 | .3382113 |
| 1 . 270 | .5779194 | .3593211 | .3385891 |
| 1 . 271 | .5775658 | .3586680 | .3389664 |
| 1 . 272 | .5772109 | .3580153 | .3393433 |
| 1 . 273 | .5768550 | .3573631 | .3397196 |
| 1 . 274 | .5764977 | .3567111 | .3400956 |
| 1 . 275 | .5761397 | .3560597 | .3404710 |
| 1 . 276 | .5757802 | .3554085 | .3408461 |
| 1 . 277 | .5754197 | .3547578 | .3412206 |
| 1 . 278 | .5750583 | .3541077 | .3415946 |
| 1 . 279 | .5746955 | .3534577 | .3419683 |
| 1 . 280 | .5743319 | .3528084 | .3423413 |
| 1 . 281 | .5739670 | .3521592 | .3427140 |
| 1 . 282 | .5736010 | .3515106 | .3430862 |
| 1 . 283 | .5732339 | .3508623 | .3434579 |
| 1 . 284 | .5728658 | .3502146 | .3438291 |
| 1 . 285 | .5724965 | .3495672 | .3441999 |
| 1 . 286 | .5721263 | .3489203 | .3445701 |
| 1 . 287 | .5717550 | .3482738 | .3449398 |
| 1 . 288 | .5713824 | .3476276 | .3453092 |
| 1 . 289 | .5710089 | .3469820 | .3456780 |
| 1 . 290 | .5706342 | .3463367 | .3460463 |
| 1 . 291 | .5702583 | .3456918 | .3464142 |
| 1 . 292 | .5698815 | .3450473 | .3467816 |
| 1 . 293 | .5695036 | .3444033 | .3471485 |
| 1 . 294 | .5691247 | .3437598 | .3475149 |
| 1 . 295 | .5687446 | .3431166 | .3478808 |
| 1 . 296 | .5683636 | .3424740 | .3482461 |
| 1 . 297 | .5679812 | .3418316 | .3486111 |
| 1 . 298 | .5675981 | .3411899 | .3489755 |
| 1 . 299 | .5672137 | .3405484 | .3493395 |
| 1 . 300 | .5668283 | .3399074 | .3497030 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.301 | 0.5664420 | 0.3392669 | 0.3500658 |
| 1.302 | .5660543 | .3386267 | .3504284 |
| 1.303 | .5656659 | .3379872 | .3507902 |
| 1.304 | .5652761 | .3373479 | .3511518 |
| 1.305 | .5648854 | .3367091 | .3515127 |
| 1.306 | .5644936 | .3360707 | .3518732 |
| 1.307 | .5641009 | .3354328 | .3522332 |
| 1.308 | .5637070 | .3347953 | .3525927 |
| 1.309 | .5633128 | .3341584 | .3529516 |
| 1.310 | .5629163 | .3335219 | .3533100 |
| 1.311 | .5625193 | .3328857 | .3536680 |
| 1.312 | .5621213 | .3322501 | .3540254 |
| 1.313 | .5617222 | .3316148 | .3543824 |
| 1.314 | .5613220 | .3309800 | .3547388 |
| 1.315 | .5609209 | .3303457 | .3550948 |
| 1.316 | .5605187 | .3297118 | .3554502 |
| 1.317 | .5601156 | .3290785 | .3558051 |
| 1.318 | .5597114 | .3284455 | .3561595 |
| 1.319 | .5593062 | .3278131 | .3565133 |
| 1.320 | .5588998 | .3271809 | .3568667 |
| 1.321 | .5584926 | .3265495 | .3572195 |
| 1.322 | .5580842 | .3259183 | .3575719 |
| 1.323 | .5576748 | .3252876 | .3579237 |
| 1.324 | .5572646 | .3246576 | .3582750 |
| 1.325 | .5568531 | .3240277 | .3586258 |
| 1.326 | .5564409 | .3233986 | .3589760 |
| 1.327 | .5560273 | .3227697 | .3593259 |
| 1.328 | .5556129 | .3221414 | .3596751 |
| 1.329 | .5551974 | .3215135 | .3600238 |
| 1.330 | .5547811 | .3208862 | .3603720 |
| 1.331 | .5543636 | .3202592 | .3607197 |
| 1.332 | .5539453 | .3196329 | .3610668 |
| 1.333 | .5535259 | .3190069 | .3614134 |
| 1.334 | .5531054 | .3183814 | .3617595 |
| 1.335 | .5526840 | .3177564 | .3621050 |
| 1.336 | .5522616 | .3171319 | .3624501 |
| 1.337 | .5518381 | .3165078 | .3627946 |
| 1.338 | .5514137 | .3158842 | .3631386 |
| 1.339 | .5509883 | .3152610 | .3634821 |
| 1.340 | .5505620 | .3146385 | .3638250 |
| 1.341 | .5501346 | .3140164 | .3641674 |
| 1.342 | .5497064 | .3133948 | .3645092 |
| 1.343 | .5492769 | .3127735 | .3648506 |
| 1.344 | .5488468 | .3121530 | .3651913 |
| 1.345 | .5484154 | .3115327 | .3655316 |
| 1.346 | .5479832 | .3109130 | .3658713 |
| 1.347 | .5475501 | .3102938 | .3662105 |
| 1.348 | .5471158 | .3096750 | .3665492 |
| 1.349 | .5466808 | .3090569 | .3668872 |
| 1.350 | .5462446 | .3084391 | .3672248 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.351 | 0.5458075 | 0.3078218 | 0.3675619 |
| 1.352 | .5453694 | .3072050 | .3678984 |
| 1.353 | .5449305 | .3065888 | .3682343 |
| 1.354 | .5444905 | .3059730 | .3685697 |
| 1.355 | .5440497 | .3053578 | .3689046 |
| 1.356 | .5436079 | .3047431 | .3692389 |
| 1.357 | .5431650 | .3041288 | .3695727 |
| 1.358 | .5427213 | .3035151 | .3699059 |
| 1.359 | .5422766 | .3029018 | .3702386 |
| 1.360 | .5418308 | .3022889 | .3705708 |
| 1.361 | .5413843 | .3016767 | .3709024 |
| 1.362 | .5409367 | .3010649 | .3712335 |
| 1.363 | .5404883 | .3004537 | .3715639 |
| 1.364 | .5400389 | .2998430 | .3718939 |
| 1.365 | .5395888 | .2992329 | .3722232 |
| 1.366 | .5391373 | .2986230 | .3725522 |
| 1.367 | .5386853 | .2980140 | .3728804 |
| 1.368 | .5382321 | .2974052 | .3732082 |
| 1.369 | .5377780 | .2967970 | .3735354 |
| 1.370 | .5373232 | .2961894 | .3738620 |
| 1.371 | .5368671 | .2955821 | .3741882 |
| 1.372 | .5364105 | .2949756 | .3745137 |
| 1.373 | .5359527 | .2943694 | .3748387 |
| 1.374 | .5354941 | .2937638 | .3751631 |
| 1.375 | .5350345 | .2931587 | .3754870 |
| 1.376 | .5345741 | .2925542 | .3758103 |
| 1.377 | .5341127 | .2919501 | .3761331 |
| 1.378 | .5336505 | .2913467 | .3764553 |
| 1.379 | .5331874 | .2907437 | .3767769 |
| 1.380 | .5327233 | .2901412 | .3770980 |
| 1.381 | .5322584 | .2895393 | .3774185 |
| 1.382 | .5317925 | .2889378 | .3777385 |
| 1.383 | .5313256 | .2883369 | .3780580 |
| 1.384 | .5308580 | .2877365 | .3783768 |
| 1.385 | .5303894 | .2871366 | .3786951 |
| 1.386 | .5299201 | .2865374 | .3790128 |
| 1.387 | .5294498 | .2859386 | .3793300 |
| 1.388 | .5289787 | .2853405 | .3796465 |
| 1.389 | .5285065 | .2847426 | .3799626 |
| 1.390 | .5280337 | .2841456 | .3802780 |
| 1.391 | .5275597 | .2835488 | .3805930 |
| 1.392 | .5270850 | .2829527 | .3809073 |
| 1.393 | .5266096 | .2823573 | .3812211 |
| 1.394 | .5261330 | .2817621 | .3815343 |
| 1.395 | .5256559 | .2811677 | .3818469 |
| 1.396 | .5251776 | .2805737 | .3821590 |
| 1.397 | .5246985 | .2799803 | .3824705 |
| 1.398 | .5242186 | .2793874 | .3827815 |
| 1.399 | .5237379 | .2787951 | .3830918 |
| 1.400 | .5232562 | .2782033 | .3834016 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.401 | 0.5227739 | 0.2776121 | 0.3837108 |
| 1.402 | .5222906 | .2770215 | .3840195 |
| 1.403 | .5218063 | .2764313 | .3843276 |
| 1.404 | .5213214 | .2758417 | .3846351 |
| 1.405 | .5208355 | .2752527 | .3849420 |
| 1.406 | .5203487 | .2746641 | .3852484 |
| 1.407 | .5198612 | .2740762 | .3855542 |
| 1.408 | .5193727 | .2734887 | .3858595 |
| 1.409 | .5188836 | .2729020 | .3861641 |
| 1.410 | .5183936 | .2723157 | .3864681 |
| 1.411 | .5179028 | .2717300 | .3867716 |
| 1.412 | .5174109 | .2711447 | .3870746 |
| 1.413 | .5169185 | .2705602 | .3873769 |
| 1.414 | .5164250 | .2699761 | .3876787 |
| 1.415 | .5159308 | .2693925 | .3879799 |
| 1.416 | .5154360 | .2688097 | .3882805 |
| 1.417 | .5149400 | .2682272 | .3885805 |
| 1.418 | .5144435 | .2676455 | .3888799 |
| 1.419 | .5139459 | .2670641 | .3891789 |
| 1.420 | .5134477 | .2664834 | .3894772 |
| 1.421 | .5129485 | .2659033 | .3897749 |
| 1.422 | .5124488 | .2653237 | .3900720 |
| 1.423 | .5119480 | .2647447 | .3903686 |
| 1.424 | .5114467 | .2641663 | .3906646 |
| 1.425 | .5109444 | .2635885 | .3909600 |
| 1.426 | .5104412 | .2630111 | .3912548 |
| 1.427 | .5099374 | .2624344 | .3915490 |
| 1.428 | .5094328 | .2618582 | .3918427 |
| 1.429 | .5089272 | .2612826 | .3921358 |
| 1.430 | .5084210 | .2607076 | .3924283 |
| 1.431 | .5079139 | .2601331 | .3927203 |
| 1.432 | .5074061 | .2595593 | .3930116 |
| 1.433 | .5068976 | .2589860 | .3933023 |
| 1.434 | .5063883 | .2584133 | .3935924 |
| 1.435 | .5058780 | .2578410 | .3938821 |
| 1.436 | .5053672 | .2572696 | .3941710 |
| 1.437 | .5048554 | .2566985 | .3944595 |
| 1.438 | .5043430 | .2561281 | .3947473 |
| 1.439 | .5038299 | .2555583 | .3950345 |
| 1.440 | .5033157 | .2549890 | .3953212 |
| 1.441 | .5028011 | .2544204 | .3956073 |
| 1.442 | .5022855 | .2538522 | .3958928 |
| 1.443 | .5017693 | .2532847 | .3961777 |
| 1.444 | .5012521 | .2527178 | .3964620 |
| 1.445 | .5007344 | .2521514 | .3967458 |
| 1.446 | .5002159 | .2515857 | .3970289 |
| 1.447 | .4996967 | .2510206 | .3973114 |
| 1.448 | .4991767 | .2504560 | .3975934 |
| 1.449 | .4986559 | .2498920 | .3978748 |
| 1.450 | .4981344 | .2493286 | .3981556 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = -1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | ρ / ρ' | A |
|------------|-------------------------|----------------|-----------|
| 1.451 | 0.4976122 | 0.2487658 | 0.3984358 |
| 1.452 | .4970891 | .2482035 | .3987154 |
| 1.453 | .4965654 | .2476419 | .3989945 |
| 1.454 | .4960409 | .2470808 | .3992729 |
| 1.455 | .4955158 | .2465204 | .3995508 |
| 1.456 | .4949899 | .2459605 | .3998281 |
| 1.457 | .4944635 | .2454014 | .4001047 |
| 1.458 | .4939359 | .2448426 | .4003808 |
| 1.459 | .4934080 | .2442847 | .4006563 |
| 1.460 | .4928791 | .2437271 | .4009312 |
| 1.461 | .4923496 | .2431702 | .4012056 |
| 1.462 | .4918195 | .2426140 | .4014792 |
| 1.463 | .4912884 | .2420583 | .4017524 |
| 1.464 | .4907571 | .2415033 | .4020249 |
| 1.465 | .4902246 | .2409488 | .4022969 |
| 1.466 | .4896916 | .2403949 | .4025683 |
| 1.467 | .4891578 | .2398416 | .4028391 |
| 1.468 | .4886234 | .2392890 | .4031093 |
| 1.469 | .4880883 | .2387369 | .4033789 |
| 1.470 | .4875526 | .2381855 | .4036479 |
| 1.471 | .4870161 | .2376347 | .4039163 |
| 1.472 | .4864788 | .2370844 | .4041841 |
| 1.473 | .4859411 | .2365348 | .4044513 |
| 1.474 | .4854025 | .2359858 | .4047180 |
| 1.475 | .4848632 | .2354373 | .4049841 |
| 1.476 | .4843232 | .2348895 | .4052495 |
| 1.477 | .4837826 | .2343423 | .4055144 |
| 1.478 | .4832414 | .2337958 | .4057787 |
| 1.479 | .4826995 | .2332498 | .4060424 |
| 1.480 | .4821571 | .2327045 | .4063054 |
| 1.481 | .4816136 | .2321597 | .4065680 |
| 1.482 | .4810698 | .2316157 | .4068298 |
| 1.483 | .4805252 | .2310721 | .4070912 |
| 1.484 | .4799799 | .2305292 | .4073519 |
| 1.485 | .4794341 | .2299870 | .4076120 |
| 1.486 | .4788874 | .2294452 | .4078716 |
| 1.487 | .4783404 | .2289043 | .4081305 |
| 1.488 | .4777924 | .2283638 | .4083889 |
| 1.489 | .4772439 | .2278240 | .4086466 |
| 1.490 | .4766947 | .2272848 | .4089038 |
| 1.491 | .4761450 | .2267462 | .4091604 |
| 1.492 | .4755946 | .2262083 | .4094164 |
| 1.493 | .4750436 | .2256710 | .4096718 |
| 1.494 | .4744920 | .2251343 | .4099266 |
| 1.495 | .4739396 | .2245982 | .4101808 |
| 1.496 | .4733867 | .2240628 | .4104344 |
| 1.497 | .4728331 | .2235280 | .4106874 |
| 1.498 | .4722788 | .2229937 | .4109399 |
| 1.499 | .4717240 | .2224602 | .4111917 |
| 1.500 | .4711686 | .2219272 | .4114430 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.501 | 0.4706126 | 0.2213949 | 0.4116937 |
| 1.502 | .4700559 | .2208632 | .4119437 |
| 1.503 | .4694987 | .2203323 | .4121932 |
| 1.504 | .4689407 | .2198017 | .4124421 |
| 1.505 | .4683824 | .2192720 | .4126903 |
| 1.506 | .4678232 | .2187428 | .4129381 |
| 1.507 | .4672635 | .2182143 | .4131852 |
| 1.508 | .4667033 | .2176865 | .4134317 |
| 1.509 | .4661423 | .2171591 | .4136777 |
| 1.510 | .4655810 | .2166326 | .4139229 |
| 1.511 | .4650188 | .2161065 | .4141677 |
| 1.512 | .4644562 | .2155812 | .4144119 |
| 1.513 | .4638929 | .2150564 | .4146554 |
| 1.514 | .4633291 | .2145324 | .4148984 |
| 1.515 | .4627647 | .2140089 | .4151408 |
| 1.516 | .4621998 | .2134862 | .4153825 |
| 1.517 | .4616342 | .2129640 | .4156237 |
| 1.518 | .4610681 | .2124424 | .4158644 |
| 1.519 | .4605015 | .2119216 | .4161044 |
| 1.520 | .4599341 | .2114013 | .4163438 |
| 1.521 | .4593662 | .2108817 | .4165827 |
| 1.522 | .4587979 | .2103627 | .4168209 |
| 1.523 | .4582289 | .2098444 | .4170586 |
| 1.524 | .4576594 | .2093267 | .4172956 |
| 1.525 | .4570894 | .2088097 | .4175321 |
| 1.526 | .4565189 | .2082934 | .4177680 |
| 1.527 | .4559475 | .2077775 | .4180033 |
| 1.528 | .4553760 | .2072625 | .4182380 |
| 1.529 | .4548036 | .2067480 | .4184721 |
| 1.530 | .4542308 | .2062342 | .4187057 |
| 1.531 | .4536576 | .2057211 | .4189386 |
| 1.532 | .4530836 | .2052085 | .4191710 |
| 1.533 | .4525093 | .2046968 | .4194027 |
| 1.534 | .4519342 | .2041855 | .4196339 |
| 1.535 | .4513588 | .2036749 | .4198645 |
| 1.536 | .4507827 | .2031650 | .4200945 |
| 1.537 | .4502063 | .2026558 | .4203239 |
| 1.538 | .4496292 | .2021472 | .4205528 |
| 1.539 | .4490517 | .2016393 | .4207810 |
| 1.540 | .4484737 | .2011320 | .4210086 |
| 1.541 | .4478950 | .2006253 | .4212357 |
| 1.542 | .4473160 | .2001193 | .4214622 |
| 1.543 | .4467363 | .1996140 | .4216881 |
| 1.544 | .4461561 | .1991093 | .4219134 |
| 1.545 | .4455755 | .1986053 | .4221381 |
| 1.546 | .4449944 | .1981019 | .4223623 |
| 1.547 | .4444129 | .1975992 | .4225858 |
| 1.548 | .4438307 | .1970971 | .4228088 |
| 1.549 | .4432482 | .1965958 | .4230312 |
| 1.550 | .4426649 | .1960950 | .4232530 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.551 | 0.4420815 | 0.1955950 | 0.4234742 |
| 1.552 | .4414973 | .1950955 | .4236948 |
| 1.553 | .4409128 | .1945968 | .4239149 |
| 1.554 | .4403279 | .1940987 | .4241343 |
| 1.555 | .4397432 | .1936012 | .4243533 |
| 1.556 | .4391564 | .1931045 | .4245715 |
| 1.557 | .4385698 | .1926084 | .4247893 |
| 1.558 | .4379829 | .1921129 | .4250064 |
| 1.559 | .4373954 | .1916181 | .4252230 |
| 1.560 | .4368076 | .1911240 | .4254390 |
| 1.561 | .4362193 | .1906306 | .4256544 |
| 1.562 | .4356306 | .1901378 | .4258691 |
| 1.563 | .4350414 | .1896457 | .4260834 |
| 1.564 | .4344516 | .1891542 | .4262971 |
| 1.565 | .4338615 | .1886635 | .4265101 |
| 1.566 | .4332709 | .1881733 | .4267226 |
| 1.567 | .4326798 | .1876839 | .4269346 |
| 1.568 | .4320883 | .1871951 | .4271459 |
| 1.569 | .4314964 | .1867069 | .4273567 |
| 1.570 | .4309041 | .1862195 | .4275669 |
| 1.571 | .4303113 | .1857328 | .4277765 |
| 1.572 | .4297182 | .1852467 | .4279855 |
| 1.573 | .4291243 | .1847612 | .4281940 |
| 1.574 | .4285304 | .1842765 | .4284018 |
| 1.575 | .4279358 | .1837924 | .4286091 |
| 1.576 | .4273408 | .1833089 | .4288159 |
| 1.577 | .4267456 | .1828263 | .4290220 |
| 1.578 | .4261497 | .1823441 | .4292276 |
| 1.579 | .4255537 | .1818628 | .4294326 |
| 1.580 | .4249570 | .1813820 | .4296370 |
| 1.581 | .4243600 | .1809020 | .4298409 |
| 1.582 | .4237625 | .1804226 | .4300442 |
| 1.583 | .4231647 | .1799439 | .4302469 |
| 1.584 | .4225665 | .1794659 | .4304490 |
| 1.585 | .4219680 | .1789886 | .4306506 |
| 1.586 | .4213689 | .1785119 | .4308516 |
| 1.587 | .4207695 | .1780359 | .4310520 |
| 1.588 | .4201698 | .1775606 | .4312518 |
| 1.589 | .4195696 | .1770860 | .4314511 |
| 1.590 | .4189689 | .1766119 | .4316499 |
| 1.591 | .4183680 | .1761387 | .4318480 |
| 1.592 | .4177666 | .1756661 | .4320456 |
| 1.593 | .4171650 | .1751942 | .4322426 |
| 1.594 | .4165629 | .1747229 | .4324390 |
| 1.595 | .4159605 | .1742524 | .4326349 |
| 1.596 | .4153575 | .1737825 | .4328302 |
| 1.597 | .4147545 | .1733134 | .4330249 |
| 1.598 | .4141508 | .1728448 | .4332191 |
| 1.599 | .4135469 | .1723770 | .4334128 |
| 1.600 | .4129427 | .1719099 | .4336058 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.601 | 0.4123380 | 0.1714433 | 0.4337983 |
| 1.602 | .4117331 | .1709776 | .4339902 |
| 1.603 | .4111277 | .1705125 | .4341815 |
| 1.604 | .4105220 | .1700481 | .4343723 |
| 1.605 | .4099159 | .1695843 | .4345626 |
| 1.606 | .4093096 | .1691213 | .4347522 |
| 1.607 | .4087029 | .1686589 | .4349414 |
| 1.608 | .4080959 | .1681973 | .4351299 |
| 1.609 | .4074885 | .1677363 | .4353179 |
| 1.610 | .4068808 | .1672760 | .4355053 |
| 1.611 | .4062728 | .1668164 | .4356922 |
| 1.612 | .4056644 | .1663575 | .4358785 |
| 1.613 | .4050556 | .1658992 | .4360642 |
| 1.614 | .4044466 | .1654417 | .4362494 |
| 1.615 | .4038372 | .1649848 | .4364341 |
| 1.616 | .4032276 | .1645287 | .4366181 |
| 1.617 | .4026177 | .1640732 | .4368017 |
| 1.618 | .4020075 | .1636185 | .4369846 |
| 1.619 | .4013967 | .1631643 | .4371671 |
| 1.620 | .4007860 | .1627110 | .4373489 |
| 1.621 | .4001747 | .1622582 | .4375302 |
| 1.622 | .3995632 | .1618061 | .4377110 |
| 1.623 | .3989515 | .1613549 | .4378911 |
| 1.624 | .3983393 | .1609042 | .4380708 |
| 1.625 | .3977271 | .1604543 | .4382499 |
| 1.626 | .3971143 | .1600050 | .4384284 |
| 1.627 | .3965013 | .1595564 | .4386064 |
| 1.628 | .3958880 | .1591085 | .4387839 |
| 1.629 | .3952746 | .1586613 | .4389608 |
| 1.630 | .3946607 | .1582148 | .4391371 |
| 1.631 | .3940468 | .1577691 | .4393129 |
| 1.632 | .3934324 | .1573240 | .4394882 |
| 1.633 | .3928178 | .1568796 | .4396629 |
| 1.634 | .3922030 | .1564359 | .4398370 |
| 1.635 | .3915878 | .1559929 | .4400106 |
| 1.636 | .3909723 | .1555505 | .4401837 |
| 1.637 | .3903566 | .1551089 | .4403563 |
| 1.638 | .3897407 | .1546680 | .4405282 |
| 1.639 | .3891246 | .1542278 | .4406997 |
| 1.640 | .3885081 | .1537882 | .4408706 |
| 1.641 | .3878916 | .1533495 | .4410409 |
| 1.642 | .3872744 | .1529118 | .4412108 |
| 1.643 | .3866574 | .1524739 | .4413800 |
| 1.644 | .3860399 | .1520371 | .4415488 |
| 1.645 | .3854222 | .1516010 | .4417169 |
| 1.646 | .3848045 | .1511657 | .4418846 |
| 1.647 | .3841862 | .1507310 | .4420517 |
| 1.648 | .3835680 | .1502972 | .4422183 |
| 1.649 | .3829494 | .1498639 | .4423843 |
| 1.650 | .3823306 | .1494313 | .4425499 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 1.651 | 0.3817115 | 0.1489994 | 0.4427148 |
| 1.652 | .3810923 | .1485683 | .4428793 |
| 1.653 | .3804728 | .1481378 | .4430432 |
| 1.654 | .3798532 | .1477081 | .4432066 |
| 1.655 | .3792333 | .1472791 | .4433694 |
| 1.656 | .3786132 | .1468507 | .4435317 |
| 1.657 | .3779930 | .1464231 | .4436935 |
| 1.658 | .3773725 | .1459961 | .4438547 |
| 1.659 | .3767517 | .1455699 | .4440155 |
| 1.660 | .3761308 | .1451443 | .4441757 |
| 1.661 | .3755097 | .1447195 | .4443353 |
| 1.662 | .3748884 | .1442954 | .4444945 |
| 1.663 | .3742669 | .1438719 | .4446531 |
| 1.664 | .3736454 | .1434492 | .4448111 |
| 1.665 | .3730234 | .1430271 | .4449687 |
| 1.666 | .3724015 | .1426059 | .4451257 |
| 1.667 | .3717792 | .1421852 | .4452823 |
| 1.668 | .3711568 | .1417653 | .4454383 |
| 1.669 | .3705344 | .1413461 | .4455937 |
| 1.670 | .3699115 | .1409275 | .4457487 |
| 1.671 | .3692888 | .1405098 | .4459031 |
| 1.672 | .3686656 | .1400926 | .4460570 |
| 1.673 | .3680424 | .1396762 | .4462104 |
| 1.674 | .3674190 | .1392605 | .4463632 |
| 1.675 | .3667955 | .1388455 | .4465156 |
| 1.676 | .3661718 | .1384312 | .4466674 |
| 1.677 | .3655480 | .1380177 | .4468187 |
| 1.678 | .3649241 | .1376048 | .4469695 |
| 1.679 | .3642999 | .1371926 | .4471198 |
| 1.680 | .3636757 | .1367812 | .4472695 |
| 1.681 | .3630512 | .1363704 | .4474188 |
| 1.682 | .3624265 | .1359603 | .4475676 |
| 1.683 | .3618019 | .1355510 | .4477158 |
| 1.684 | .3611770 | .1351423 | .4478635 |
| 1.685 | .3605521 | .1347344 | .4480107 |
| 1.686 | .3599270 | .1343272 | .4481574 |
| 1.687 | .3593019 | .1339207 | .4483036 |
| 1.688 | .3586765 | .1335149 | .4484493 |
| 1.689 | .3580512 | .1331098 | .4485944 |
| 1.690 | .3574255 | .1327054 | .4487391 |
| 1.691 | .3567998 | .1323017 | .4488833 |
| 1.692 | .3561741 | .1318987 | .4490269 |
| 1.693 | .3555481 | .1314964 | .4491701 |
| 1.694 | .3549223 | .1310949 | .4493127 |
| 1.695 | .3542960 | .1306940 | .4494549 |
| 1.696 | .3536698 | .1302938 | .4495966 |
| 1.697 | .3530435 | .1298944 | .4497377 |
| 1.698 | .3524171 | .1294956 | .4498784 |
| 1.699 | .3517906 | .1290976 | .4500185 |
| 1.700 | .3511641 | .1287003 | .4501581 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.701 | 0.3505375 | 0.1283037 | 0.4502973 |
| 1.702 | .3499107 | .1279078 | .4504360 |
| 1.703 | .3492839 | .1275126 | .4505741 |
| 1.704 | .3486570 | .1271181 | .4507118 |
| 1.705 | .3480299 | .1267243 | .4508490 |
| 1.706 | .3474029 | .1263312 | .4509856 |
| 1.707 | .3467757 | .1259388 | .4511218 |
| 1.708 | .3461486 | .1255472 | .4512575 |
| 1.709 | .3455213 | .1251563 | .4513927 |
| 1.710 | .3448941 | .1247661 | .4515274 |
| 1.711 | .3442666 | .1243765 | .4516617 |
| 1.712 | .3436393 | .1239877 | .4517954 |
| 1.713 | .3430117 | .1235996 | .4519286 |
| 1.714 | .3423841 | .1232122 | .4520614 |
| 1.715 | .3417567 | .1228256 | .4521936 |
| 1.716 | .3411289 | .1224395 | .4523255 |
| 1.717 | .3405013 | .1220543 | .4524567 |
| 1.718 | .3398735 | .1216697 | .4525876 |
| 1.719 | .3392458 | .1212859 | .4527179 |
| 1.720 | .3386179 | .1209027 | .4528478 |
| 1.721 | .3379901 | .1205203 | .4529772 |
| 1.722 | .3373623 | .1201385 | .4531061 |
| 1.723 | .3367345 | .1197576 | .4532345 |
| 1.724 | .3361066 | .1193773 | .4533624 |
| 1.725 | .3354786 | .1189977 | .4534899 |
| 1.726 | .3348507 | .1186188 | .4536169 |
| 1.727 | .3342227 | .1182406 | .4537434 |
| 1.728 | .3335947 | .1178631 | .4538694 |
| 1.729 | .3329667 | .1174864 | .4539950 |
| 1.730 | .3323386 | .1171103 | .4541201 |
| 1.731 | .3317107 | .1167350 | .4542447 |
| 1.732 | .3310827 | .1163604 | .4543688 |
| 1.733 | .3304548 | .1159865 | .4544925 |
| 1.734 | .3298266 | .1156133 | .4546157 |
| 1.735 | .3291988 | .1152408 | .4547384 |
| 1.736 | .3285707 | .1148690 | .4548607 |
| 1.737 | .3279427 | .1144979 | .4549825 |
| 1.738 | .3273148 | .1141276 | .4551039 |
| 1.739 | .3266867 | .1137579 | .4552248 |
| 1.740 | .3260590 | .1133890 | .4553452 |
| 1.741 | .3254310 | .1130207 | .4554651 |
| 1.742 | .3248031 | .1126532 | .4555846 |
| 1.743 | .3241752 | .1122864 | .4557036 |
| 1.744 | .3235474 | .1119203 | .4558222 |
| 1.745 | .3229196 | .1115549 | .4559403 |
| 1.746 | .3222919 | .1111902 | .4560580 |
| 1.747 | .3216642 | .1108263 | .4561751 |
| 1.748 | .3210364 | .1104630 | .4562919 |
| 1.749 | .3204088 | .1101004 | .4564082 |
| 1.750 | .3197812 | .1097386 | .4565240 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.751 | 0.3191536 | 0.1093774 | 0.4566394 |
| 1.752 | .3185261 | .1090170 | .4567543 |
| 1.753 | .3178986 | .1086573 | .4568688 |
| 1.754 | .3172713 | .1082983 | .4569828 |
| 1.755 | .3166439 | .1079400 | .4570963 |
| 1.756 | .3160168 | .1075824 | .4572094 |
| 1.757 | .3153894 | .1072255 | .4573221 |
| 1.758 | .3147624 | .1068694 | .4574343 |
| 1.759 | .3141353 | .1065139 | .4575461 |
| 1.760 | .3135083 | .1061591 | .4576575 |
| 1.761 | .3128815 | .1058051 | .4577683 |
| 1.762 | .3122545 | .1054517 | .4578788 |
| 1.763 | .3116278 | .1050991 | .4579888 |
| 1.764 | .3110011 | .1047472 | .4580983 |
| 1.765 | .3103745 | .1043960 | .4582075 |
| 1.766 | .3097479 | .1040454 | .4583161 |
| 1.767 | .3091216 | .1036957 | .4584244 |
| 1.768 | .3084952 | .1033466 | .4585322 |
| 1.769 | .3078691 | .1029982 | .4586395 |
| 1.770 | .3072430 | .1026506 | .4587465 |
| 1.771 | .3066169 | .1023036 | .4588530 |
| 1.772 | .3059910 | .1019573 | .4589590 |
| 1.773 | .3053652 | .1016118 | .4590646 |
| 1.774 | .3047394 | .1012669 | .4591698 |
| 1.775 | .3041138 | .1009228 | .4592746 |
| 1.776 | .3034883 | .1005793 | .4593789 |
| 1.777 | .3028630 | .1002366 | .4594828 |
| 1.778 | .3022378 | .0998946 | .4595863 |
| 1.779 | .3016128 | .0995533 | .4596894 |
| 1.780 | .3009876 | .0992127 | .4597920 |
| 1.781 | .3003629 | .0988729 | .4598942 |
| 1.782 | .2997381 | .0985336 | .4599960 |
| 1.783 | .2991134 | .0981951 | .4600973 |
| 1.784 | .2984891 | .0978574 | .4601982 |
| 1.785 | .2978647 | .0975203 | .4602988 |
| 1.786 | .2972406 | .0971840 | .4603988 |
| 1.787 | .2966165 | .0968483 | .4604985 |
| 1.788 | .2959926 | .0965133 | .4605978 |
| 1.789 | .2953688 | .0961791 | .4606966 |
| 1.790 | .2947453 | .0958455 | .4607950 |
| 1.791 | .2941218 | .0955127 | .4608930 |
| 1.792 | .2934986 | .0951806 | .4609906 |
| 1.793 | .2928755 | .0948492 | .4610877 |
| 1.794 | .2922525 | .0945184 | .4611845 |
| 1.795 | .2916297 | .0941884 | .4612808 |
| 1.796 | .2910071 | .0938591 | .4613768 |
| 1.797 | .2903845 | .0935304 | .4614723 |
| 1.798 | .2897623 | .0932025 | .4615674 |
| 1.799 | .2891401 | .0928753 | .4616622 |
| 1.800 | .2885183 | .0925489 | .4617565 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.801 | 0.2878965 | 0.0922230 | 0.4618504 |
| 1.802 | .2872750 | .0918980 | .4619438 |
| 1.803 | .2866535 | .0915735 | .4620369 |
| 1.804 | .2860324 | .0912499 | .4621296 |
| 1.805 | .2854114 | .0909269 | .4622219 |
| 1.806 | .2847905 | .0906046 | .4623138 |
| 1.807 | .2841700 | .0902830 | .4624053 |
| 1.808 | .2835495 | .0899621 | .4624964 |
| 1.809 | .2829294 | .0896420 | .4625870 |
| 1.810 | .2823093 | .0893225 | .4626773 |
| 1.811 | .2816895 | .0890037 | .4627672 |
| 1.812 | .2810699 | .0886856 | .4628567 |
| 1.813 | .2804505 | .0883682 | .4629458 |
| 1.814 | .2798314 | .0880515 | .4630346 |
| 1.815 | .2792125 | .0877356 | .4631229 |
| 1.816 | .2785938 | .0874203 | .4632108 |
| 1.817 | .2779752 | .0871057 | .4632984 |
| 1.818 | .2773570 | .0867918 | .4633855 |
| 1.819 | .2767389 | .0864786 | .4634723 |
| 1.820 | .2761210 | .0861661 | .4635587 |
| 1.821 | .2755034 | .0858543 | .4636447 |
| 1.822 | .2748861 | .0855432 | .4637303 |
| 1.823 | .2742690 | .0852329 | .4638155 |
| 1.824 | .2736521 | .0849232 | .4639003 |
| 1.825 | .2730356 | .0846142 | .4639848 |
| 1.826 | .2724190 | .0843056 | .4640689 |
| 1.827 | .2718030 | .0839983 | .4641526 |
| 1.828 | .2711870 | .0836913 | .4642359 |
| 1.829 | .2705714 | .0833851 | .4643189 |
| 1.830 | .2699561 | .0830797 | .4644014 |
| 1.831 | .2693409 | .0827748 | .4644836 |
| 1.832 | .2687261 | .0824707 | .4645654 |
| 1.833 | .2681114 | .0821673 | .4646469 |
| 1.834 | .2674971 | .0818645 | .4647280 |
| 1.835 | .2668830 | .0815625 | .4648087 |
| 1.836 | .2662692 | .0812611 | .4648890 |
| 1.837 | .2656557 | .0809605 | .4649690 |
| 1.838 | .2650425 | .0806605 | .4650486 |
| 1.839 | .2644296 | .0803613 | .4651278 |
| 1.840 | .2638168 | .0800627 | .4652066 |
| 1.841 | .2632045 | .0797648 | .4652851 |
| 1.842 | .2625924 | .0794676 | .4653633 |
| 1.843 | .2619805 | .0791711 | .4654410 |
| 1.844 | .2613690 | .0788753 | .4655184 |
| 1.845 | .2607577 | .0785802 | .4655955 |
| 1.846 | .2601468 | .0782858 | .4656722 |
| 1.847 | .2595361 | .0779920 | .4657485 |
| 1.848 | .2589259 | .0776990 | .4658245 |
| 1.849 | .2583157 | .0774066 | .4659001 |
| 1.850 | .2577061 | .0771150 | .4659753 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 1.851 | 0.2570966 | 0.0768240 | 0.4660502 |
| 1.852 | 0.2564874 | 0.0765337 | 0.4661248 |
| 1.853 | 0.2558787 | 0.0762441 | 0.4661989 |
| 1.854 | 0.2552701 | 0.0759552 | 0.4662728 |
| 1.855 | 0.2546621 | 0.0756670 | 0.4663463 |
| 1.856 | 0.2540542 | 0.0753794 | 0.4664194 |
| 1.857 | 0.2534467 | 0.0750926 | 0.4664922 |
| 1.858 | 0.2528394 | 0.0748064 | 0.4665646 |
| 1.859 | 0.2522326 | 0.0745209 | 0.4666367 |
| 1.860 | 0.2516261 | 0.0742362 | 0.4667085 |
| 1.861 | 0.2510199 | 0.0739521 | 0.4667799 |
| 1.862 | 0.2504141 | 0.0736687 | 0.4668509 |
| 1.863 | 0.2498085 | 0.0733859 | 0.4669216 |
| 1.864 | 0.2492034 | 0.0731039 | 0.4669920 |
| 1.865 | 0.2485985 | 0.0728225 | 0.4670620 |
| 1.866 | 0.2479940 | 0.0725418 | 0.4671317 |
| 1.867 | 0.2473898 | 0.0722618 | 0.4672011 |
| 1.868 | 0.2467860 | 0.0719825 | 0.4672701 |
| 1.869 | 0.2461826 | 0.0717039 | 0.4673388 |
| 1.870 | 0.2455795 | 0.0714259 | 0.4674071 |
| 1.871 | 0.2449769 | 0.0711487 | 0.4674751 |
| 1.872 | 0.2443744 | 0.0708720 | 0.4675428 |
| 1.873 | 0.2437725 | 0.0705962 | 0.4676101 |
| 1.874 | 0.2431708 | 0.0703209 | 0.4676772 |
| 1.875 | 0.2425695 | 0.0700463 | 0.4677438 |
| 1.876 | 0.2419687 | 0.0697725 | 0.4678102 |
| 1.877 | 0.2413681 | 0.0694993 | 0.4678762 |
| 1.878 | 0.2407681 | 0.0692268 | 0.4679419 |
| 1.879 | 0.2401682 | 0.0689549 | 0.4680073 |
| 1.880 | 0.2395689 | 0.0686838 | 0.4680723 |
| 1.881 | 0.2389698 | 0.0684133 | 0.4681370 |
| 1.882 | 0.2383712 | 0.0681435 | 0.4682014 |
| 1.883 | 0.2377730 | 0.0678744 | 0.4682655 |
| 1.884 | 0.2371752 | 0.0676060 | 0.4683292 |
| 1.885 | 0.2365778 | 0.0673382 | 0.4683927 |
| 1.886 | 0.2359807 | 0.0670711 | 0.4684558 |
| 1.887 | 0.2353841 | 0.0668047 | 0.4685186 |
| 1.888 | 0.2347878 | 0.0665389 | 0.4685810 |
| 1.889 | 0.2341919 | 0.0662738 | 0.4686432 |
| 1.890 | 0.2335965 | 0.0660094 | 0.4687050 |
| 1.891 | 0.2330014 | 0.0657457 | 0.4687666 |
| 1.892 | 0.2324069 | 0.0654826 | 0.4688278 |
| 1.893 | 0.2318126 | 0.0652202 | 0.4688887 |
| 1.894 | 0.2312189 | 0.0649586 | 0.4689493 |
| 1.895 | 0.2306254 | 0.0646975 | 0.4690096 |
| 1.896 | 0.2300326 | 0.0644371 | 0.4690695 |
| 1.897 | 0.2294399 | 0.0641774 | 0.4691292 |
| 1.898 | 0.2288478 | 0.0639184 | 0.4691885 |
| 1.899 | 0.2282562 | 0.0636601 | 0.4692476 |
| 1.900 | 0.2276648 | 0.0634023 | 0.4693063 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | ρ/ρ' | A |
|------------|-----------------------|--------------|-----------|
| 1.901 | 0.2270741 | 0.0631453 | 0.4693648 |
| 1.902 | .2264837 | .0628889 | .4694229 |
| 1.903 | .2258937 | .0626333 | .4694807 |
| 1.904 | .2253042 | .0623782 | .4695383 |
| 1.905 | .2247151 | .0621239 | .4695955 |
| 1.906 | .2241264 | .0618702 | .4696524 |
| 1.907 | .2235383 | .0616172 | .4697091 |
| 1.908 | .2229506 | .0613648 | .4697654 |
| 1.909 | .2223633 | .0611131 | .4698215 |
| 1.910 | .2217765 | .0608621 | .4698772 |
| 1.911 | .2211901 | .0606117 | .4699327 |
| 1.912 | .2206041 | .0603620 | .4699878 |
| 1.913 | .2200186 | .0601129 | .4700427 |
| 1.914 | .2194336 | .0598645 | .4700973 |
| 1.915 | .2188491 | .0596168 | .4701516 |
| 1.916 | .2182650 | .0593697 | .4702056 |
| 1.917 | .2176815 | .0591234 | .4702593 |
| 1.918 | .2170982 | .0588776 | .4703127 |
| 1.919 | .2165157 | .0586325 | .4703658 |
| 1.920 | .2159334 | .0583881 | .4704187 |
| 1.921 | .2153517 | .0581443 | .4704712 |
| 1.922 | .2147706 | .0579012 | .4705235 |
| 1.923 | .2141897 | .0576587 | .4705755 |
| 1.924 | .2136095 | .0574170 | .4706272 |
| 1.925 | .2130297 | .0571758 | .4706787 |
| 1.926 | .2124504 | .0569353 | .4707299 |
| 1.927 | .2118716 | .0566955 | .4707807 |
| 1.928 | .2112933 | .0564563 | .4708313 |
| 1.929 | .2107155 | .0562178 | .4708817 |
| 1.930 | .2101383 | .0559799 | .4709317 |
| 1.931 | .2095615 | .0557427 | .4709815 |
| 1.932 | .2089851 | .0555061 | .4710310 |
| 1.933 | .2084094 | .0552702 | .4710802 |
| 1.934 | .2078341 | .0550349 | .4711292 |
| 1.935 | .2072592 | .0548003 | .4711779 |
| 1.936 | .2066850 | .0545663 | .4712263 |
| 1.937 | .2061112 | .0543330 | .4712745 |
| 1.938 | .2055381 | .0541003 | .4713224 |
| 1.939 | .2049653 | .0538683 | .4713700 |
| 1.940 | .2043932 | .0536370 | .4714174 |
| 1.941 | .2038215 | .0534062 | .4714645 |
| 1.942 | .2032504 | .0531761 | .4715113 |
| 1.943 | .2026797 | .0529467 | .4715578 |
| 1.944 | .2021096 | .0527179 | .4716042 |
| 1.945 | .2015402 | .0524898 | .4716502 |
| 1.946 | .2009711 | .0522622 | .4716960 |
| 1.947 | .2004027 | .0520354 | .4717415 |
| 1.948 | .1998347 | .0518091 | .4717868 |
| 1.949 | .1992673 | .0515836 | .4718318 |
| 1.950 | .1987004 | .0513586 | .4718766 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|----------|----------|
| 1.951 | .1981341 | .0511343 | .4719211 |
| 1.952 | .1975683 | .0509107 | .4719653 |
| 1.953 | .1970032 | .0506877 | .4720093 |
| 1.954 | .1964386 | .0504653 | .4720530 |
| 1.955 | .1958744 | .0502435 | .4720965 |
| 1.956 | .1953109 | .0500225 | .4721398 |
| 1.957 | .1947479 | .0498020 | .4721828 |
| 1.958 | .1941854 | .0495821 | .4722255 |
| 1.959 | .1936236 | .0493629 | .4722680 |
| 1.960 | .1930623 | .0491444 | .4723103 |
| 1.961 | .1925016 | .0489265 | .4723523 |
| 1.962 | .1919414 | .0487092 | .4723941 |
| 1.963 | .1913819 | .0484925 | .4724356 |
| 1.964 | .1908228 | .0482765 | .4724769 |
| 1.965 | .1902645 | .0480611 | .4725179 |
| 1.966 | .1897065 | .0478463 | .4725587 |
| 1.967 | .1891492 | .0476322 | .4725993 |
| 1.968 | .1885926 | .0474187 | .4726396 |
| 1.969 | .1880364 | .0472058 | .4726797 |
| 1.970 | .1874810 | .0469936 | .4727195 |
| 1.971 | .1869260 | .0467819 | .4727592 |
| 1.972 | .1863716 | .0465709 | .4727985 |
| 1.973 | .1858179 | .0463605 | .4728377 |
| 1.974 | .1852647 | .0461508 | .4728766 |
| 1.975 | .1847122 | .0459417 | .4729153 |
| 1.976 | .1841603 | .0457332 | .4729537 |
| 1.977 | .1836089 | .0455253 | .4729920 |
| 1.978 | .1830581 | .0453181 | .4730300 |
| 1.979 | .1825080 | .0451115 | .4730677 |
| 1.980 | .1819585 | .0449055 | .4731053 |
| 1.981 | .1814095 | .0447001 | .4731426 |
| 1.982 | .1808612 | .0444953 | .4731797 |
| 1.983 | .1803135 | .0442912 | .4732165 |
| 1.984 | .1797664 | .0440876 | .4732532 |
| 1.985 | .1792199 | .0438847 | .4732896 |
| 1.986 | .1786742 | .0436825 | .4733258 |
| 1.987 | .1781288 | .0434808 | .4733618 |
| 1.988 | .1775843 | .0432797 | .4733975 |
| 1.989 | .1770403 | .0430793 | .4734331 |
| 1.990 | .1764969 | .0428795 | .4734684 |
| 1.991 | .1759543 | .0426803 | .4735035 |
| 1.992 | .1754121 | .0424816 | .4735384 |
| 1.993 | .1748708 | .0422837 | .4735731 |
| 1.994 | .1743299 | .0420863 | .4736075 |
| 1.995 | .1737897 | .0418895 | .4736418 |
| 1.996 | .1732501 | .0416934 | .4736758 |
| 1.997 | .1727113 | .0414978 | .4737096 |
| 1.998 | .1721730 | .0413029 | .4737432 |
| 1.999 | .1716355 | .0411086 | .4737766 |
| 2.000 | .1710985 | .0409149 | .4738098 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.001 | 0.1705622 | 0.0407217 | 0.4738428 |
| 2.002 | .1700266 | .0405292 | .4738756 |
| 2.003 | .1694916 | .0403373 | .4739082 |
| 2.004 | .1689572 | .0401460 | .4739406 |
| 2.005 | .1684235 | .0399553 | .4739727 |
| 2.006 | .1678905 | .0397652 | .4740047 |
| 2.007 | .1673581 | .0395758 | .4740365 |
| 2.008 | .1668264 | .0393869 | .4740680 |
| 2.009 | .1662955 | .0391986 | .4740994 |
| 2.010 | .1657650 | .0390109 | .4741306 |
| 2.011 | .1652354 | .0388238 | .4741615 |
| 2.012 | .1647063 | .0386373 | .4741923 |
| 2.013 | .1641780 | .0384514 | .4742229 |
| 2.014 | .1636504 | .0382662 | .4742532 |
| 2.015 | .1631233 | .0380814 | .4742834 |
| 2.016 | .1625971 | .0378974 | .4743134 |
| 2.017 | .1620714 | .0377138 | .4743432 |
| 2.018 | .1615465 | .0375309 | .4743728 |
| 2.019 | .1610222 | .0373486 | .4744022 |
| 2.020 | .1604986 | .0371669 | .4744314 |
| 2.021 | .1599757 | .0369857 | .4744604 |
| 2.022 | .1594536 | .0368052 | .4744893 |
| 2.023 | .1589321 | .0366252 | .4745179 |
| 2.024 | .1584113 | .0364459 | .4745464 |
| 2.025 | .1578912 | .0362671 | .4745746 |
| 2.026 | .1573718 | .0360889 | .4746027 |
| 2.027 | .1568530 | .0359113 | .4746306 |
| 2.028 | .1563350 | .0357343 | .4746584 |
| 2.029 | .1558177 | .0355578 | .4746859 |
| 2.030 | .1553011 | .0353820 | .4747132 |
| 2.031 | .1547852 | .0352067 | .4747404 |
| 2.032 | .1542701 | .0350320 | .4747674 |
| 2.033 | .1537556 | .0348579 | .4747942 |
| 2.034 | .1532419 | .0346844 | .4748209 |
| 2.035 | .1527288 | .0345115 | .4748473 |
| 2.036 | .1522165 | .0343391 | .4748736 |
| 2.037 | .1517049 | .0341673 | .4748997 |
| 2.038 | .1511940 | .0339961 | .4749256 |
| 2.039 | .1506839 | .0338255 | .4749514 |
| 2.040 | .1501744 | .0336554 | .4749770 |
| 2.041 | .1496657 | .0334860 | .4750024 |
| 2.042 | .1491576 | .0333171 | .4750276 |
| 2.043 | .1486504 | .0331487 | .4750527 |
| 2.044 | .1481439 | .0329810 | .4750776 |
| 2.045 | .1476381 | .0328138 | .4751023 |
| 2.046 | .1471331 | .0326472 | .4751268 |
| 2.047 | .1466287 | .0324812 | .4751512 |
| 2.048 | .1461252 | .0323157 | .4751754 |
| 2.049 | .1456223 | .0321508 | .4751995 |
| 2.050 | .1451202 | .0319865 | .4752234 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.051 | 0.1446188 | 0.0318227 | 0.4752471 |
| 2.052 | .1441182 | .0316595 | .4752707 |
| 2.053 | .1436184 | .0314969 | .4752941 |
| 2.054 | .1431192 | .0313348 | .4753173 |
| 2.055 | .1426209 | .0311733 | .4753404 |
| 2.056 | .1421232 | .0310123 | .4753633 |
| 2.057 | .1416264 | .0308520 | .4753860 |
| 2.058 | .1411303 | .0306921 | .4754086 |
| 2.059 | .1406349 | .0305329 | .4754311 |
| 2.060 | .1401404 | .0303742 | .4754534 |
| 2.061 | .1396465 | .0302160 | .4754755 |
| 2.062 | .1391535 | .0300585 | .4754975 |
| 2.063 | .1386611 | .0299014 | .4755193 |
| 2.064 | .1381696 | .0297450 | .4755409 |
| 2.065 | .1376788 | .0295890 | .4755624 |
| 2.066 | .1371888 | .0294337 | .4755838 |
| 2.067 | .1366995 | .0292789 | .4756050 |
| 2.068 | .1362111 | .0291246 | .4756260 |
| 2.069 | .1357234 | .0289709 | .4756469 |
| 2.070 | .1352365 | .0288178 | .4756677 |
| 2.071 | .1347504 | .0286652 | .4756883 |
| 2.072 | .1342650 | .0285131 | .4757087 |
| 2.073 | .1337804 | .0283616 | .4757290 |
| 2.074 | .1332966 | .0282107 | .4757492 |
| 2.075 | .1328136 | .0280603 | .4757692 |
| 2.076 | .1323313 | .0279104 | .4757891 |
| 2.077 | .1318499 | .0277611 | .4758088 |
| 2.078 | .1313693 | .0276123 | .4758284 |
| 2.079 | .1308893 | .0274641 | .4758478 |
| 2.080 | .1304103 | .0273164 | .4758671 |
| 2.081 | .1299320 | .0271692 | .4758863 |
| 2.082 | .1294545 | .0270226 | .4759053 |
| 2.083 | .1289779 | .0268766 | .4759242 |
| 2.084 | .1285019 | .0267310 | .4759429 |
| 2.085 | .1280269 | .0265860 | .4759615 |
| 2.086 | .1275525 | .0264416 | .4759799 |
| 2.087 | .1270790 | .0262976 | .4759983 |
| 2.088 | .1266063 | .0261542 | .4760165 |
| 2.089 | .1261344 | .0260114 | .4760345 |
| 2.090 | .1256633 | .0258691 | .4760524 |
| 2.091 | .1251931 | .0257273 | .4760702 |
| 2.092 | .1247236 | .0255860 | .4760879 |
| 2.093 | .1242549 | .0254453 | .4761054 |
| 2.094 | .1237871 | .0253051 | .4761228 |
| 2.095 | .1233201 | .0251654 | .4761400 |
| 2.096 | .1228538 | .0250263 | .4761572 |
| 2.097 | .1223884 | .0248877 | .4761742 |
| 2.098 | .1219238 | .0247496 | .4761910 |
| 2.099 | .1214601 | .0246120 | .4762078 |
| 2.100 | .1209971 | .0244750 | .4762244 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.101 | 0.1205351 | 0.0243385 | 0.4762409 |
| 2.102 | .1200737 | .0242025 | .4762572 |
| 2.103 | .1196133 | .0240670 | .4762734 |
| 2.104 | .1191536 | .0239320 | .4762896 |
| 2.105 | .1186948 | .0237976 | .4763055 |
| 2.106 | .1182368 | .0236637 | .4763214 |
| 2.107 | .1177796 | .0235303 | .4763371 |
| 2.108 | .1173233 | .0233974 | .4763528 |
| 2.109 | .1168678 | .0232650 | .4763683 |
| 2.110 | .1164131 | .0231332 | .4763836 |
| 2.111 | .1159593 | .0230018 | .4763989 |
| 2.112 | .1155063 | .0228710 | .4764140 |
| 2.113 | .1150542 | .0227407 | .4764291 |
| 2.114 | .1146029 | .0226109 | .4764440 |
| 2.115 | .1141524 | .0224816 | .4764588 |
| 2.116 | .1137028 | .0223528 | .4764734 |
| 2.117 | .1132540 | .0222245 | .4764880 |
| 2.118 | .1128061 | .0220968 | .4765024 |
| 2.119 | .1123590 | .0219695 | .4765168 |
| 2.120 | .1119127 | .0218427 | .4765310 |
| 2.121 | .1114673 | .0217165 | .4765451 |
| 2.122 | .1110228 | .0215907 | .4765591 |
| 2.123 | .1105791 | .0214655 | .4765729 |
| 2.124 | .1101363 | .0213407 | .4765867 |
| 2.125 | .1096943 | .0212164 | .4766004 |
| 2.126 | .1092532 | .0210927 | .4766139 |
| 2.127 | .1088129 | .0209694 | .4766274 |
| 2.128 | .1083735 | .0208467 | .4766407 |
| 2.129 | .1079350 | .0207244 | .4766539 |
| 2.130 | .1074973 | .0206027 | .4766670 |
| 2.131 | .1070605 | .0204814 | .4766800 |
| 2.132 | .1066245 | .0203606 | .4766929 |
| 2.133 | .1061894 | .0202403 | .4767057 |
| 2.134 | .1057552 | .0201205 | .4767184 |
| 2.135 | .1053218 | .0200012 | .4767310 |
| 2.136 | .1048893 | .0198824 | .4767435 |
| 2.137 | .1044577 | .0197641 | .4767559 |
| 2.138 | .1040270 | .0196463 | .4767682 |
| 2.139 | .1035971 | .0195289 | .4767804 |
| 2.140 | .1031681 | .0194120 | .4767924 |
| 2.141 | .1027399 | .0192956 | .4768044 |
| 2.142 | .1023126 | .0191797 | .4768163 |
| 2.143 | .1018863 | .0190643 | .4768281 |
| 2.144 | .1014607 | .0189494 | .4768398 |
| 2.145 | .1010361 | .0188349 | .4768514 |
| 2.146 | .1006124 | .0187210 | .4768629 |
| 2.147 | .1001895 | .0186075 | .4768742 |
| 2.148 | .0997675 | .0184944 | .4768855 |
| 2.149 | .0993464 | .0183819 | .4768967 |
| 2.150 | .0989262 | .0182698 | .4769079 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.151 | 0.0985068 | 0.0181582 | 0.4769189 |
| 2.152 | .0980884 | .0180471 | .4769298 |
| 2.153 | .0976708 | .0179365 | .4769406 |
| 2.154 | .0972542 | .0178263 | .4769514 |
| 2.155 | .0968384 | .0177166 | .4769620 |
| 2.156 | .0964235 | .0176074 | .4769726 |
| 2.157 | .0960095 | .0174986 | .4769830 |
| 2.158 | .0955964 | .0173903 | .4769934 |
| 2.159 | .0951842 | .0172825 | .4770037 |
| 2.160 | .0947729 | .0171751 | .4770139 |
| 2.161 | .0943625 | .0170682 | .4770240 |
| 2.162 | .0939529 | .0169618 | .4770340 |
| 2.163 | .0935443 | .0168558 | .4770440 |
| 2.164 | .0931366 | .0167503 | .4770538 |
| 2.165 | .0927297 | .0166452 | .4770636 |
| 2.166 | .0923238 | .0165406 | .4770733 |
| 2.167 | .0919187 | .0164365 | .4770828 |
| 2.168 | .0915146 | .0163328 | .4770924 |
| 2.169 | .0911114 | .0162296 | .4771018 |
| 2.170 | .0907091 | .0161268 | .4771111 |
| 2.171 | .0903077 | .0160245 | .4771204 |
| 2.172 | .0899072 | .0159226 | .4771296 |
| 2.173 | .0895076 | .0158212 | .4771387 |
| 2.174 | .0891089 | .0157203 | .4771477 |
| 2.175 | .0887111 | .0156198 | .4771566 |
| 2.176 | .0883142 | .0155197 | .4771655 |
| 2.177 | .0879183 | .0154201 | .4771743 |
| 2.178 | .0875232 | .0153209 | .4771830 |
| 2.179 | .0871291 | .0152222 | .4771916 |
| 2.180 | .0867359 | .0151239 | .4772001 |
| 2.181 | .0863436 | .0150261 | .4772086 |
| 2.182 | .0859522 | .0149287 | .4772170 |
| 2.183 | .0855617 | .0148318 | .4772253 |
| 2.184 | .0851722 | .0147353 | .4772335 |
| 2.185 | .0847835 | .0146392 | .4772417 |
| 2.186 | .0843958 | .0145436 | .4772498 |
| 2.187 | .0840090 | .0144484 | .4772578 |
| 2.188 | .0836231 | .0143537 | .4772657 |
| 2.189 | .0832382 | .0142594 | .4772736 |
| 2.190 | .0828541 | .0141655 | .4772814 |
| 2.191 | .0824710 | .0140720 | .4772891 |
| 2.192 | .0820889 | .0139790 | .4772968 |
| 2.193 | .0817076 | .0138864 | .4773044 |
| 2.194 | .0813272 | .0137943 | .4773119 |
| 2.195 | .0809479 | .0137026 | .4773193 |
| 2.196 | .0805694 | .0136113 | .4773267 |
| 2.197 | .0801918 | .0135204 | .4773340 |
| 2.198 | .0798152 | .0134300 | .4773412 |
| 2.199 | .0794395 | .0133400 | .4773484 |
| 2.200 | .0790648 | .0132504 | .4773555 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|----------|----------|
| 2.201 | .0786909 | .0131612 | .4773625 |
| 2.202 | .0783180 | .0130725 | .4773695 |
| 2.203 | .0779460 | .0129841 | .4773764 |
| 2.204 | .0775749 | .0128962 | .4773833 |
| 2.205 | .0772048 | .0128087 | .4773900 |
| 2.206 | .0768357 | .0127217 | .4773967 |
| 2.207 | .0764675 | .0126350 | .4774034 |
| 2.208 | .0761001 | .0125488 | .4774100 |
| 2.209 | .0757338 | .0124630 | .4774165 |
| 2.210 | .0753684 | .0123776 | .4774229 |
| 2.211 | .0750038 | .0122926 | .4774293 |
| 2.212 | .0746403 | .0122080 | .4774356 |
| 2.213 | .0742776 | .0121238 | .4774419 |
| 2.214 | .0739160 | .0120401 | .4774481 |
| 2.215 | .0735552 | .0119567 | .4774543 |
| 2.216 | .0731955 | .0118738 | .4774604 |
| 2.217 | .0728366 | .0117912 | .4774664 |
| 2.218 | .0724787 | .0117091 | .4774724 |
| 2.219 | .0721217 | .0116274 | .4774783 |
| 2.220 | .0717657 | .0115460 | .4774841 |
| 2.221 | .0714106 | .0114651 | .4774899 |
| 2.222 | .0710564 | .0113846 | .4774956 |
| 2.223 | .0707033 | .0113045 | .4775013 |
| 2.224 | .0703510 | .0112247 | .4775069 |
| 2.225 | .0699997 | .0111454 | .4775125 |
| 2.226 | .0696493 | .0110665 | .4775180 |
| 2.227 | .0692999 | .0109879 | .4775235 |
| 2.228 | .0689514 | .0109098 | .4775289 |
| 2.229 | .0686039 | .0108321 | .4775342 |
| 2.230 | .0682574 | .0107547 | .4775395 |
| 2.231 | .0679117 | .0106777 | .4775448 |
| 2.232 | .0675671 | .0106012 | .4775500 |
| 2.233 | .0672233 | .0105250 | .4775551 |
| 2.234 | .0668806 | .0104492 | .4775602 |
| 2.235 | .0665387 | .0103738 | .4775652 |
| 2.236 | .0661978 | .0102987 | .4775702 |
| 2.237 | .0658579 | .0102241 | .4775751 |
| 2.238 | .0655190 | .0101498 | .4775800 |
| 2.239 | .0651810 | .0100760 | .4775848 |
| 2.240 | .0648439 | .0100025 | .4775896 |
| 2.241 | .0645078 | .0099294 | .4775943 |
| 2.242 | .0641726 | .0098566 | .4775990 |
| 2.243 | .0638384 | .0097843 | .4776036 |
| 2.244 | .0635052 | .0097123 | .4776082 |
| 2.245 | .0631728 | .0096407 | .4776128 |
| 2.246 | .0628415 | .0095695 | .4776172 |
| 2.247 | .0625111 | .0094986 | .4776217 |
| 2.248 | .0621817 | .0094281 | .4776261 |
| 2.249 | .0618532 | .0093580 | .4776304 |
| 2.250 | .0615257 | .0092883 | .4776347 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.251 | 0.0611991 | 0.0092189 | 0.4776390 |
| 2.252 | .0608735 | .0091499 | .4776432 |
| 2.253 | .0605489 | .0090813 | .4776474 |
| 2.254 | .0602252 | .0090130 | .4776515 |
| 2.255 | .0599025 | .0089451 | .4776556 |
| 2.256 | .0595807 | .0088776 | .4776596 |
| 2.257 | .0592598 | .0088104 | .4776636 |
| 2.258 | .0589400 | .0087436 | .4776675 |
| 2.259 | .0586210 | .0086772 | .4776714 |
| 2.260 | .0583031 | .0086111 | .4776753 |
| 2.261 | .0579861 | .0085454 | .4776791 |
| 2.262 | .0576701 | .0084800 | .4776829 |
| 2.263 | .0573550 | .0084150 | .4776866 |
| 2.264 | .0570410 | .0083503 | .4776903 |
| 2.265 | .0567278 | .0082860 | .4776940 |
| 2.266 | .0564156 | .0082221 | .4776976 |
| 2.267 | .0561044 | .0081585 | .4777012 |
| 2.268 | .0557941 | .0080952 | .4777047 |
| 2.269 | .0554848 | .0080323 | .4777082 |
| 2.270 | .0551764 | .0079698 | .4777117 |
| 2.271 | .0548691 | .0079076 | .4777151 |
| 2.272 | .0545626 | .0078457 | .4777185 |
| 2.273 | .0542572 | .0077842 | .4777219 |
| 2.274 | .0539527 | .0077231 | .4777252 |
| 2.275 | .0536492 | .0076622 | .4777284 |
| 2.276 | .0533466 | .0076018 | .4777317 |
| 2.277 | .0530449 | .0075416 | .4777349 |
| 2.278 | .0527443 | .0074818 | .4777380 |
| 2.279 | .0524446 | .0074224 | .4777412 |
| 2.280 | .0521458 | .0073633 | .4777443 |
| 2.281 | .0518481 | .0073045 | .4777473 |
| 2.282 | .0515513 | .0072460 | .4777503 |
| 2.283 | .0512554 | .0071879 | .4777533 |
| 2.284 | .0509605 | .0071302 | .4777563 |
| 2.285 | .0506667 | .0070727 | .4777592 |
| 2.286 | .0503736 | .0070156 | .4777621 |
| 2.287 | .0500817 | .0069588 | .4777649 |
| 2.288 | .0497906 | .0069024 | .4777678 |
| 2.289 | .0495005 | .0068463 | .4777705 |
| 2.290 | .0492115 | .0067905 | .4777733 |
| 2.291 | .0489233 | .0067350 | .4777760 |
| 2.292 | .0486361 | .0066799 | .4777787 |
| 2.293 | .0483499 | .0066250 | .4777814 |
| 2.294 | .0480646 | .0065705 | .4777840 |
| 2.295 | .0477803 | .0065164 | .4777866 |
| 2.296 | .0474969 | .0064625 | .4777892 |
| 2.297 | .0472145 | .0064090 | .4777917 |
| 2.298 | .0469331 | .0063558 | .4777942 |
| 2.299 | .0466527 | .0063029 | .4777967 |
| 2.300 | .0463732 | .0062503 | .4777991 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.301 | 0.0460946 | 0.0061980 | 0.4778016 |
| 2.302 | 0.0458171 | 0.0061461 | 0.4778039 |
| 2.303 | 0.0455404 | 0.0060944 | 0.4778063 |
| 2.304 | 0.0452648 | 0.0060431 | 0.4778086 |
| 2.305 | 0.0449901 | 0.0059921 | 0.4778109 |
| 2.306 | 0.0447163 | 0.0059414 | 0.4778132 |
| 2.307 | 0.0444436 | 0.0058910 | 0.4778155 |
| 2.308 | 0.0441718 | 0.0058409 | 0.4778177 |
| 2.309 | 0.0439009 | 0.0057911 | 0.4778199 |
| 2.310 | 0.0436310 | 0.0057417 | 0.4778220 |
| 2.311 | 0.0433620 | 0.0056925 | 0.4778242 |
| 2.312 | 0.0430941 | 0.0056436 | 0.4778263 |
| 2.313 | 0.0428271 | 0.0055951 | 0.4778284 |
| 2.314 | 0.0425610 | 0.0055468 | 0.4778304 |
| 2.315 | 0.0422959 | 0.0054988 | 0.4778325 |
| 2.316 | 0.0420317 | 0.0054512 | 0.4778345 |
| 2.317 | 0.0417686 | 0.0054038 | 0.4778365 |
| 2.318 | 0.0415063 | 0.0053567 | 0.4778384 |
| 2.319 | 0.0412450 | 0.0053100 | 0.4778404 |
| 2.320 | 0.0409847 | 0.0052635 | 0.4778423 |
| 2.321 | 0.0407254 | 0.0052173 | 0.4778442 |
| 2.322 | 0.0404670 | 0.0051714 | 0.4778460 |
| 2.323 | 0.0402095 | 0.0051258 | 0.4778479 |
| 2.324 | 0.0399530 | 0.0050805 | 0.4778497 |
| 2.325 | 0.0396975 | 0.0050355 | 0.4778515 |
| 2.326 | 0.0394429 | 0.0049908 | 0.4778532 |
| 2.327 | 0.0391893 | 0.0049463 | 0.4778550 |
| 2.328 | 0.0389366 | 0.0049022 | 0.4778567 |
| 2.329 | 0.0386849 | 0.0048583 | 0.4778584 |
| 2.330 | 0.0384341 | 0.0048147 | 0.4778601 |
| 2.331 | 0.0381843 | 0.0047714 | 0.4778618 |
| 2.332 | 0.0379354 | 0.0047284 | 0.4778634 |
| 2.333 | 0.0376875 | 0.0046856 | 0.4778650 |
| 2.334 | 0.0374405 | 0.0046432 | 0.4778666 |
| 2.335 | 0.0371945 | 0.0046010 | 0.4778682 |
| 2.336 | 0.0369495 | 0.0045591 | 0.4778697 |
| 2.337 | 0.0367054 | 0.0045174 | 0.4778713 |
| 2.338 | 0.0364622 | 0.0044761 | 0.4778728 |
| 2.339 | 0.0362200 | 0.0044350 | 0.4778743 |
| 2.340 | 0.0359787 | 0.0043942 | 0.4778757 |
| 2.341 | 0.0357384 | 0.0043537 | 0.4778772 |
| 2.342 | 0.0354991 | 0.0043134 | 0.4778786 |
| 2.343 | 0.0352606 | 0.0042734 | 0.4778800 |
| 2.344 | 0.0350232 | 0.0042337 | 0.4778814 |
| 2.345 | 0.0347867 | 0.0041942 | 0.4778828 |
| 2.346 | 0.0345511 | 0.0041550 | 0.4778842 |
| 2.347 | 0.0343165 | 0.0041161 | 0.4778855 |
| 2.348 | 0.0340828 | 0.0040774 | 0.4778868 |
| 2.349 | 0.0338500 | 0.0040390 | 0.4778881 |
| 2.350 | 0.0336182 | 0.0040009 | 0.4778894 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.351 | 0.0333873 | 0.0039630 | 0.4778907 |
| 2.352 | .0331574 | .0039254 | .4778919 |
| 2.353 | .0329284 | .0038881 | .4778932 |
| 2.354 | .0327004 | .0038510 | .4778944 |
| 2.355 | .0324733 | .0038141 | .4778956 |
| 2.356 | .03222472 | .0037776 | .4778968 |
| 2.357 | .0320219 | .0037412 | .4778979 |
| 2.358 | .0317977 | .0037052 | .4778991 |
| 2.359 | .0315743 | .0036693 | .4779002 |
| 2.360 | .0313519 | .0036338 | .4779013 |
| 2.361 | .0311305 | .0035985 | .4779024 |
| 2.362 | .0309099 | .0035634 | .4779035 |
| 2.363 | .0306903 | .0035286 | .4779046 |
| 2.364 | .0304716 | .0034940 | .4779057 |
| 2.365 | .0302539 | .0034597 | .4779067 |
| 2.366 | .0300371 | .0034256 | .4779077 |
| 2.367 | .0298213 | .0033918 | .4779087 |
| 2.368 | .0296064 | .0033582 | .4779097 |
| 2.369 | .0293923 | .0033248 | .4779107 |
| 2.370 | .0291793 | .0032917 | .4779117 |
| 2.371 | .0289671 | .0032589 | .4779127 |
| 2.372 | .0287559 | .0032262 | .4779136 |
| 2.373 | .0285456 | .0031938 | .4779145 |
| 2.374 | .0283362 | .0031617 | .4779154 |
| 2.375 | .0281278 | .0031298 | .4779163 |
| 2.376 | .0279203 | .0030981 | .4779172 |
| 2.377 | .0277138 | .0030667 | .4779181 |
| 2.378 | .0275081 | .0030354 | .4779190 |
| 2.379 | .0273033 | .0030045 | .4779198 |
| 2.380 | .0270995 | .0029737 | .4779206 |
| 2.381 | .0268966 | .0029432 | .4779215 |
| 2.382 | .0266946 | .0029129 | .4779223 |
| 2.383 | .0264936 | .0028828 | .4779231 |
| 2.384 | .0262934 | .0028530 | .4779239 |
| 2.385 | .0260942 | .0028234 | .4779246 |
| 2.386 | .0258959 | .0027940 | .4779254 |
| 2.387 | .0256985 | .0027648 | .4779262 |
| 2.388 | .0255020 | .0027359 | .4779269 |
| 2.389 | .0253064 | .0027072 | .4779276 |
| 2.390 | .0251118 | .0026787 | .4779283 |
| 2.391 | .0249180 | .0026504 | .4779291 |
| 2.392 | .0247252 | .0026224 | .4779298 |
| 2.393 | .0245333 | .0025945 | .4779304 |
| 2.394 | .0243423 | .0025669 | .4779311 |
| 2.395 | .0241521 | .0025395 | .4779318 |
| 2.396 | .0239629 | .0025123 | .4779324 |
| 2.397 | .0237746 | .0024853 | .4779331 |
| 2.398 | .0235873 | .0024585 | .4779337 |
| 2.399 | .0234008 | .0024320 | .4779343 |
| 2.400 | .0232152 | .0024056 | .4779349 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.401 | 0.0230305 | 0.0023795 | 0.4779355 |
| 2.402 | .0228467 | .0023536 | .4779361 |
| 2.403 | .0226638 | .0023278 | .4779367 |
| 2.404 | .0224818 | .0023023 | .4779373 |
| 2.405 | .0223007 | .0022770 | .4779379 |
| 2.406 | .0221205 | .0022519 | .4779384 |
| 2.407 | .0219412 | .0022270 | .4779390 |
| 2.408 | .0217628 | .0022023 | .4779395 |
| 2.409 | .0215853 | .0021778 | .4779400 |
| 2.410 | .0214086 | .0021535 | .4779406 |
| 2.411 | .0212329 | .0021294 | .4779411 |
| 2.412 | .0210580 | .0021055 | .4779416 |
| 2.413 | .0208841 | .0020818 | .4779421 |
| 2.414 | .0207110 | .0020583 | .4779426 |
| 2.415 | .0205388 | .0020350 | .4779431 |
| 2.416 | .0203675 | .0020118 | .4779435 |
| 2.417 | .0201971 | .0019889 | .4779440 |
| 2.418 | .0200275 | .0019662 | .4779445 |
| 2.419 | .0198588 | .0019436 | .4779449 |
| 2.420 | .0196910 | .0019213 | .4779453 |
| 2.421 | .0195241 | .0018991 | .4779458 |
| 2.422 | .0193581 | .0018771 | .4779462 |
| 2.423 | .0191929 | .0018553 | .4779466 |
| 2.424 | .0190286 | .0018337 | .4779470 |
| 2.425 | .0188652 | .0018123 | .4779474 |
| 2.426 | .0187027 | .0017911 | .4779478 |
| 2.427 | .0185410 | .0017700 | .4779482 |
| 2.428 | .0183802 | .0017492 | .4779486 |
| 2.429 | .0182202 | .0017285 | .4779490 |
| 2.430 | .0180612 | .0017080 | .4779494 |
| 2.431 | .0179029 | .0016876 | .4779497 |
| 2.432 | .0177456 | .0016675 | .4779501 |
| 2.433 | .0175891 | .0016475 | .4779505 |
| 2.434 | .0174335 | .0016277 | .4779508 |
| 2.435 | .0172787 | .0016081 | .4779511 |
| 2.436 | .0171248 | .0015887 | .4779515 |
| 2.437 | .0169717 | .0015694 | .4779518 |
| 2.438 | .0168195 | .0015503 | .4779521 |
| 2.439 | .0166682 | .0015314 | .4779524 |
| 2.440 | .0165177 | .0015126 | .4779528 |
| 2.441 | .0163680 | .0014940 | .4779531 |
| 2.442 | .0162192 | .0014756 | .4779534 |
| 2.443 | .0160712 | .0014574 | .4779537 |
| 2.444 | .0159241 | .0014393 | .4779539 |
| 2.445 | .0157779 | .0014213 | .4779542 |
| 2.446 | .0156325 | .0014036 | .4779545 |
| 2.447 | .0154879 | .0013860 | .4779548 |
| 2.448 | .0153441 | .0013686 | .4779550 |
| 2.449 | .0152012 | .0013513 | .4779553 |
| 2.450 | .0150591 | .0013342 | .4779556 |

TABLE III. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.451 | 0.0149179 | 0.0013173 | 0.4779558 |
| 2.452 | .0147775 | .0013005 | .4779561 |
| 2.453 | .0146379 | .0012839 | .4779563 |
| 2.454 | .0144992 | .0012674 | .4779565 |
| 2.455 | .0143613 | .0012511 | .4779568 |
| 2.456 | .0142242 | .0012349 | .4779570 |
| 2.457 | .0140879 | .0012189 | .4779572 |
| 2.458 | .0139525 | .0012031 | .4779575 |
| 2.459 | .0138179 | .0011874 | .4779577 |
| 2.460 | .0136841 | .0011718 | .4779579 |
| 2.461 | .0135511 | .0011564 | .4779581 |
| 2.462 | .0134189 | .0011412 | .4779583 |
| 2.463 | .0132876 | .0011261 | .4779585 |
| 2.464 | .0131570 | .0011111 | .4779587 |
| 2.465 | .0130273 | .0010963 | .4779589 |
| 2.466 | .0128984 | .0010817 | .4779591 |
| 2.467 | .0127703 | .0010672 | .4779593 |
| 2.468 | .0126430 | .0010528 | .4779595 |
| 2.469 | .0125165 | .0010386 | .4779596 |
| 2.470 | .0123908 | .0010245 | .4779598 |
| 2.471 | .0122659 | .0010106 | .4779600 |
| 2.472 | .0121418 | .0009968 | .4779602 |
| 2.473 | .0120185 | .0009831 | .4779603 |
| 2.474 | .0118960 | .0009696 | .4779605 |
| 2.475 | .0117743 | .0009562 | .4779606 |
| 2.476 | .0116534 | .0009430 | .4779608 |
| 2.477 | .0115332 | .0009299 | .4779610 |
| 2.478 | .0114139 | .0009169 | .4779611 |
| 2.479 | .0112954 | .0009041 | .4779613 |
| 2.480 | .0111776 | .0008914 | .4779614 |
| 2.481 | .0110606 | .0008788 | .4779615 |
| 2.482 | .0109444 | .0008664 | .4779617 |
| 2.483 | .0108290 | .0008541 | .4779618 |
| 2.484 | .0107143 | .0008419 | .4779619 |
| 2.485 | .0106005 | .0008298 | .4779621 |
| 2.486 | .0104874 | .0008179 | .4779622 |
| 2.487 | .0103750 | .0008061 | .4779623 |
| 2.488 | .0102635 | .0007945 | .4779624 |
| 2.489 | .0101527 | .0007829 | .4779626 |
| 2.490 | .0100427 | .0007715 | .4779627 |
| 2.491 | .0099334 | .0007602 | .4779628 |
| 2.492 | .0098249 | .0007491 | .4779629 |
| 2.493 | .0097172 | .0007380 | .4779630 |
| 2.494 | .0096102 | .0007271 | .4779631 |
| 2.495 | .0095040 | .0007163 | .4779632 |
| 2.496 | .0093985 | .0007056 | .4779633 |
| 2.497 | .0092938 | .0006950 | .4779634 |
| 2.498 | .0091898 | .0006846 | .4779635 |
| 2.499 | .0090866 | .0006743 | .4779636 |
| 2.500 | .0089841 | .0006640 | .4779637 |

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TABLE III. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.501 | 0.0088824 | 0.0006539 | 0.4779638 |
| 2.502 | .0087814 | .0006440 | .4779639 |
| 2.503 | .0086812 | .0006341 | .4779640 |
| 2.504 | .0085817 | .0006243 | .4779640 |
| 2.505 | .0084829 | .0006147 | .4779641 |
| 2.506 | .0083849 | .0006052 | .4779642 |
| 2.507 | .0082875 | .0005957 | .4779643 |
| 2.508 | .0081910 | .0005864 | .4779644 |
| 2.509 | .0080951 | .0005772 | .4779644 |
| 2.510 | .0080000 | .0005681 | .4779645 |
| 2.511 | .0079056 | .0005591 | .4779646 |
| 2.512 | .0078119 | .0005502 | .4779646 |
| 2.513 | .0077189 | .0005415 | .4779647 |
| 2.514 | .0076266 | .0005328 | .4779648 |
| 2.515 | .0075351 | .0005242 | .4779648 |
| 2.516 | .0074443 | .0005158 | .4779649 |
| 2.517 | .0073542 | .0005074 | .4779650 |
| 2.518 | .0072647 | .0004991 | .4779650 |
| 2.519 | .0071760 | .0004910 | .4779651 |
| 2.520 | .0070880 | .0004829 | .4779651 |
| 2.521 | .0070007 | .0004749 | .4779652 |
| 2.522 | .0069141 | .0004671 | .4779653 |
| 2.523 | .0068282 | .0004593 | .4779653 |
| 2.524 | .0067430 | .0004516 | .4779654 |
| 2.525 | .0066585 | .0004441 | .4779654 |
| 2.526 | .0065746 | .0004366 | .4779655 |
| 2.527 | .0064915 | .0004292 | .4779655 |
| 2.528 | .0064090 | .0004219 | .4779656 |
| 2.529 | .0063272 | .0004147 | .4779656 |
| 2.530 | .0062461 | .0004076 | .4779656 |
| 2.531 | .0061657 | .0004006 | .4779657 |
| 2.532 | .0060860 | .0003937 | .4779657 |
| 2.533 | .0060069 | .0003868 | .4779658 |
| 2.534 | .0059285 | .0003801 | .4779658 |
| 2.535 | .0058507 | .0003734 | .4779658 |
| 2.536 | .0057737 | .0003669 | .4779659 |
| 2.537 | .0056973 | .0003604 | .4779659 |
| 2.538 | .0056215 | .0003540 | .4779660 |
| 2.539 | .0055464 | .0003477 | .4779660 |
| 2.540 | .0054720 | .0003414 | .4779660 |
| 2.541 | .0053982 | .0003353 | .4779661 |
| 2.542 | .0053251 | .0003292 | .4779661 |
| 2.543 | .0052526 | .0003232 | .4779661 |
| 2.544 | .0051808 | .0003174 | .4779662 |
| 2.545 | .0051096 | .0003115 | .4779662 |
| 2.546 | .0050390 | .0003058 | .4779662 |
| 2.547 | .0049691 | .0003001 | .4779662 |
| 2.548 | .0048999 | .0002946 | .4779663 |
| 2.549 | .0048312 | .0002891 | .4779663 |
| 2.550 | .0047632 | .0002836 | .4779663 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.551 | 0.0046959 | 0.0002783 | 0.4779664 |
| 2.552 | .0046291 | .0002730 | .4779664 |
| 2.553 | .0045630 | .0002678 | .4779664 |
| 2.554 | .0044975 | .0002627 | .4779664 |
| 2.555 | .0044326 | .0002577 | .4779664 |
| 2.556 | .0043683 | .0002527 | .4779665 |
| 2.557 | .0043047 | .0002478 | .4779665 |
| 2.558 | .0042417 | .0002430 | .4779665 |
| 2.559 | .0041792 | .0002382 | .4779665 |
| 2.560 | .0041174 | .0002335 | .4779665 |
| 2.561 | .0040562 | .0002289 | .4779666 |
| 2.562 | .0039955 | .0002243 | .4779666 |
| 2.563 | .0039355 | .0002199 | .4779666 |
| 2.564 | .0038761 | .0002154 | .4779666 |
| 2.565 | .0038173 | .0002111 | .4779666 |
| 2.566 | .0037590 | .0002068 | .4779667 |
| 2.567 | .0037014 | .0002026 | .4779667 |
| 2.568 | .0036443 | .0001984 | .4779667 |
| 2.569 | .0035878 | .0001943 | .4779667 |
| 2.570 | .0035319 | .0001903 | .4779667 |
| 2.571 | .0034766 | .0001864 | .4779667 |
| 2.572 | .0034218 | .0001825 | .4779667 |
| 2.573 | .0033676 | .0001786 | .4779668 |
| 2.574 | .0033140 | .0001749 | .4779668 |
| 2.575 | .0032610 | .0001711 | .4779668 |
| 2.576 | .0032085 | .0001675 | .4779668 |
| 2.577 | .0031566 | .0001639 | .4779668 |
| 2.578 | .0031052 | .0001603 | .4779668 |
| 2.579 | .0030544 | .0001569 | .4779668 |
| 2.580 | .0030041 | .0001534 | .4779668 |
| 2.581 | .0029544 | .0001501 | .4779668 |
| 2.582 | .0029053 | .0001468 | .4779668 |
| 2.583 | .0028566 | .0001435 | .4779669 |
| 2.584 | .0028086 | .0001403 | .4779669 |
| 2.585 | .0027610 | .0001371 | .4779669 |
| 2.586 | .0027140 | .0001341 | .4779669 |
| 2.587 | .0026676 | .0001310 | .4779669 |
| 2.588 | .0026216 | .0001280 | .4779669 |
| 2.589 | .0025762 | .0001251 | .4779669 |
| 2.590 | .0025313 | .0001222 | .4779669 |
| 2.591 | .0024870 | .0001194 | .4779669 |
| 2.592 | .0024432 | .0001166 | .4779669 |
| 2.593 | .0023998 | .0001138 | .4779670 |
| 2.594 | .0023570 | .0001112 | .4779670 |
| 2.595 | .0023147 | .0001085 | .4779670 |
| 2.596 | .0022729 | .0001059 | .4779670 |
| 2.597 | .0022316 | .0001034 | .4779670 |
| 2.598 | .0021909 | .0001009 | .4779670 |
| 2.599 | .0021506 | .0000984 | .4779670 |
| 2.600 | .0021108 | .0000960 | .4779670 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.601 | 0.0020715 | 0.0000936 | 0.4779670 |
| 2.602 | .0020327 | .0000913 | .4779670 |
| 2.603 | .0019944 | .0000890 | .4779670 |
| 2.604 | .0019565 | .0000868 | .4779670 |
| 2.605 | .0019192 | .0000846 | .4779670 |
| 2.606 | .0018823 | .0000825 | .4779670 |
| 2.607 | .0018459 | .0000804 | .4779670 |
| 2.608 | .0018100 | .0000783 | .4779670 |
| 2.609 | .0017745 | .0000763 | .4779670 |
| 2.610 | .0017396 | .0000743 | .4779670 |
| 2.611 | .0017050 | .0000723 | .4779670 |
| 2.612 | .0016710 | .0000704 | .4779670 |
| 2.613 | .0016374 | .0000686 | .4779670 |
| 2.614 | .0016042 | .0000667 | .4779670 |
| 2.615 | .0015715 | .0000649 | .4779670 |
| 2.616 | .0015393 | .0000632 | .4779670 |
| 2.617 | .0015075 | .0000615 | .4779670 |
| 2.618 | .0014761 | .0000598 | .4779670 |
| 2.619 | .0014452 | .0000581 | .4779670 |
| 2.620 | .0014147 | .0000565 | .4779670 |
| 2.621 | .0013847 | .0000549 | .4779670 |
| 2.622 | .0013551 | .0000534 | .4779670 |
| 2.623 | .0013259 | .0000519 | .4779670 |
| 2.624 | .0012971 | .0000504 | .4779670 |
| 2.625 | .0012688 | .0000489 | .4779670 |
| 2.626 | .0012409 | .0000475 | .4779670 |
| 2.627 | .0012134 | .0000461 | .4779670 |
| 2.628 | .0011863 | .0000448 | .4779670 |
| 2.629 | .0011596 | .0000434 | .4779670 |
| 2.630 | .0011333 | .0000421 | .4779670 |
| 2.631 | .0011075 | .0000409 | .4779670 |
| 2.632 | .0010820 | .0000396 | .4779670 |
| 2.633 | .0010569 | .0000384 | .4779670 |
| 2.634 | .0010322 | .0000372 | .4779670 |
| 2.635 | .0010079 | .0000361 | .4779670 |
| 2.636 | .0009840 | .0000350 | .4779670 |
| 2.637 | .0009605 | .0000339 | .4779670 |
| 2.638 | .0009374 | .0000328 | .4779670 |
| 2.639 | .0009146 | .0000318 | .4779670 |
| 2.640 | .0008923 | .0000307 | .4779670 |
| 2.641 | .0008703 | .0000297 | .4779670 |
| 2.642 | .0008486 | .0000288 | .4779670 |
| 2.643 | .0008274 | .0000278 | .4779670 |
| 2.644 | .0008065 | .0000269 | .4779670 |
| 2.645 | .0007859 | .0000260 | .4779670 |
| 2.646 | .0007657 | .0000251 | .4779670 |
| 2.647 | .0007459 | .0000243 | .4779670 |
| 2.648 | .0007264 | .0000234 | .4779670 |
| 2.649 | .0007073 | .0000226 | .4779670 |
| 2.650 | .0006885 | .0000218 | .4779670 |

TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V/\rho' V_{cr}$ | p/p' | A |
|------------|-----------------------|-----------|-----------|
| 2.651 | 0.0006706 | 0.0000211 | 0.4779670 |
| 2.652 | .0006519 | .0000203 | .4779670 |
| 2.653 | .0006341 | .0000196 | .4779670 |
| 2.654 | .0006167 | .0000189 | .4779670 |
| 2.655 | .0005996 | .0000182 | .4779670 |
| 2.656 | .0005828 | .0000175 | .4779670 |
| 2.657 | .0005663 | .0000169 | .4779670 |
| 2.658 | .0005501 | .0000162 | .4779670 |
| 2.659 | .0005343 | .0000156 | .4779670 |
| 2.660 | .0005188 | .0000150 | .4779670 |
| 2.661 | .0005036 | .0000145 | .4779670 |
| 2.662 | .0004887 | .0000139 | .4779670 |
| 2.663 | .0004740 | .0000134 | .4779670 |
| 2.664 | .0004597 | .0000128 | .4779670 |
| 2.665 | .0004457 | .0000123 | .4779670 |
| 2.666 | .0004320 | .0000118 | .4779670 |
| 2.667 | .0004186 | .0000113 | .4779670 |
| 2.668 | .0004054 | .0000109 | .4779670 |
| 2.669 | .0003926 | .0000104 | .4779670 |
| 2.670 | .0003800 | .0000100 | .4779670 |
| 2.671 | .0003677 | .0000096 | .4779670 |
| 2.672 | .0003557 | .0000092 | .4779670 |
| 2.673 | .0003439 | .0000088 | .4779670 |
| 2.674 | .0003325 | .0000084 | .4779670 |
| 2.675 | .0003212 | .0000080 | .4779670 |
| 2.676 | .0003103 | .0000076 | .4779670 |
| 2.677 | .0002996 | .0000073 | .4779670 |
| 2.678 | .0002891 | .0000070 | .4779670 |
| 2.679 | .0002789 | .0000066 | .4779670 |
| 2.680 | .0002690 | .0000063 | .4779670 |
| 2.681 | .0002593 | .0000060 | .4779670 |
| 2.682 | .0002498 | .0000058 | .4779670 |
| 2.683 | .0002406 | .0000055 | .4779670 |
| 2.684 | .0002316 | .0000052 | .4779670 |
| 2.685 | .0002229 | .0000050 | .4779670 |
| 2.686 | .0002143 | .0000047 | .4779670 |
| 2.687 | .0002060 | .0000045 | .4779670 |
| 2.688 | .0001980 | .0000042 | .4779670 |
| 2.689 | .0001901 | .0000040 | .4779670 |
| 2.690 | .0001825 | .0000038 | .4779670 |
| 2.691 | .0001750 | .0000036 | .4779670 |
| 2.692 | .0001678 | .0000034 | .4779670 |
| 2.693 | .0001608 | .0000032 | .4779670 |
| 2.694 | .0001540 | .0000031 | .4779670 |
| 2.695 | .0001474 | .0000029 | .4779670 |
| 2.696 | .0001410 | .0000027 | .4779670 |
| 2.697 | .0001348 | .0000026 | .4779670 |
| 2.698 | .0001288 | .0000024 | .4779670 |
| 2.699 | .0001229 | .0000023 | .4779670 |
| 2.700 | .0001173 | .0000021 | .4779670 |

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TABLE II. - Continued. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.701 | 0.0001118 | 0.0000020 | 0.4779670 |
| 2.702 | .0001065 | .00000019 | .4779670 |
| 2.703 | .0001014 | .00000018 | .4779670 |
| 2.704 | .0000964 | .00000017 | .4779670 |
| 2.705 | .0000917 | .00000015 | .4779670 |
| 2.706 | .0000871 | .00000014 | .4779670 |
| 2.707 | .0000826 | .00000013 | .4779670 |
| 2.708 | .0000783 | .00000013 | .4779670 |
| 2.709 | .0000742 | .00000012 | .4779670 |
| 2.710 | .0000702 | .00000011 | .4779670 |
| 2.711 | .0000664 | .00000010 | .4779670 |
| 2.712 | .0000627 | .00000009 | .4779670 |
| 2.713 | .0000591 | .00000009 | .4779670 |
| 2.714 | .0000557 | .00000008 | .4779670 |
| 2.715 | .0000525 | .00000007 | .4779670 |
| 2.716 | .0000494 | .00000007 | .4779670 |
| 2.717 | .0000464 | .00000006 | .4779670 |
| 2.718 | .0000435 | .00000006 | .4779670 |
| 2.719 | .0000407 | .00000005 | .4779670 |
| 2.720 | .0000381 | .00000005 | .4779670 |
| 2.721 | .0000356 | .00000004 | .4779670 |
| 2.722 | .0000332 | .00000004 | .4779670 |
| 2.723 | .0000310 | .00000004 | .4779670 |
| 2.724 | .0000288 | .00000003 | .4779670 |
| 2.725 | .0000267 | .00000003 | .4779670 |
| 2.726 | .0000248 | .00000003 | .4779670 |
| 2.727 | .0000229 | .00000003 | .4779670 |
| 2.728 | .0000212 | .00000002 | .4779670 |
| 2.729 | .0000195 | .00000002 | .4779670 |
| 2.730 | .0000179 | .00000002 | .4779670 |
| 2.731 | .0000165 | .00000002 | .4779670 |
| 2.732 | .0000151 | .00000001 | .4779670 |
| 2.733 | .0000138 | .00000001 | .4779670 |
| 2.734 | .0000125 | .00000001 | .4779670 |
| 2.735 | .0000114 | .00000001 | .4779670 |
| 2.736 | .0000103 | .00000001 | .4779670 |
| 2.737 | .0000093 | .00000001 | .4779670 |
| 2.738 | .0000084 | .00000001 | .4779670 |
| 2.739 | .0000075 | .00000001 | .4779670 |
| 2.740 | .0000067 | .00000001 | .4779670 |
| 2.741 | .0000060 | .00000000 | .4779670 |
| 2.742 | .0000053 | .00000000 | .4779670 |
| 2.743 | .0000047 | .00000000 | .4779670 |
| 2.744 | .0000041 | .00000000 | .4779670 |
| 2.745 | .0000036 | .00000000 | .4779670 |
| 2.746 | .0000031 | .00000000 | .4779670 |
| 2.747 | .0000027 | .00000000 | .4779670 |
| 2.748 | .0000023 | .00000000 | .4779670 |
| 2.749 | .0000020 | .00000000 | .4779670 |
| 2.750 | .0000016 | .00000000 | .4779670 |

TABLE II. - Concluded. MASS-FLOW PARAMETERS FOR $\gamma = 1.3$

| V/V_{cr} | $\rho V / \rho' V_{cr}$ | p/p' | A |
|------------|-------------------------|-----------|-----------|
| 2.751 | 0.0000014 | 0.0000000 | 0.4779670 |
| 2.752 | .0000011 | .0000000 | .4779670 |
| 2.753 | .0000009 | .0000000 | .4779670 |
| 2.754 | .0000007 | .0000000 | .4779670 |
| 2.755 | .0000006 | .0000000 | .4779670 |
| 2.756 | .0000005 | .0000000 | .4779670 |
| 2.757 | .0000004 | .0000000 | .4779670 |
| 2.758 | .0000003 | .0000000 | .4779670 |
| 2.759 | .0000002 | .0000000 | .4779670 |
| 2.760 | .0000001 | .0000000 | .4779670 |
| 2.761 | .0000001 | .0000000 | .4779670 |
| 2.762 | .0000001 | .0000000 | .4779670 |
| 2.763 | .0000000 | .0000000 | .4779670 |
| 2.764 | .0000000 | .0000000 | .4779670 |
| 2.765 | .0000000 | .0000000 | .4779670 |
| 2.766 | .0000000 | .0000000 | .4779670 |
| 2.767 | .0000000 | .0000000 | .4779670 |
| 2.768 | .0000000 | .0000000 | .4779670 |

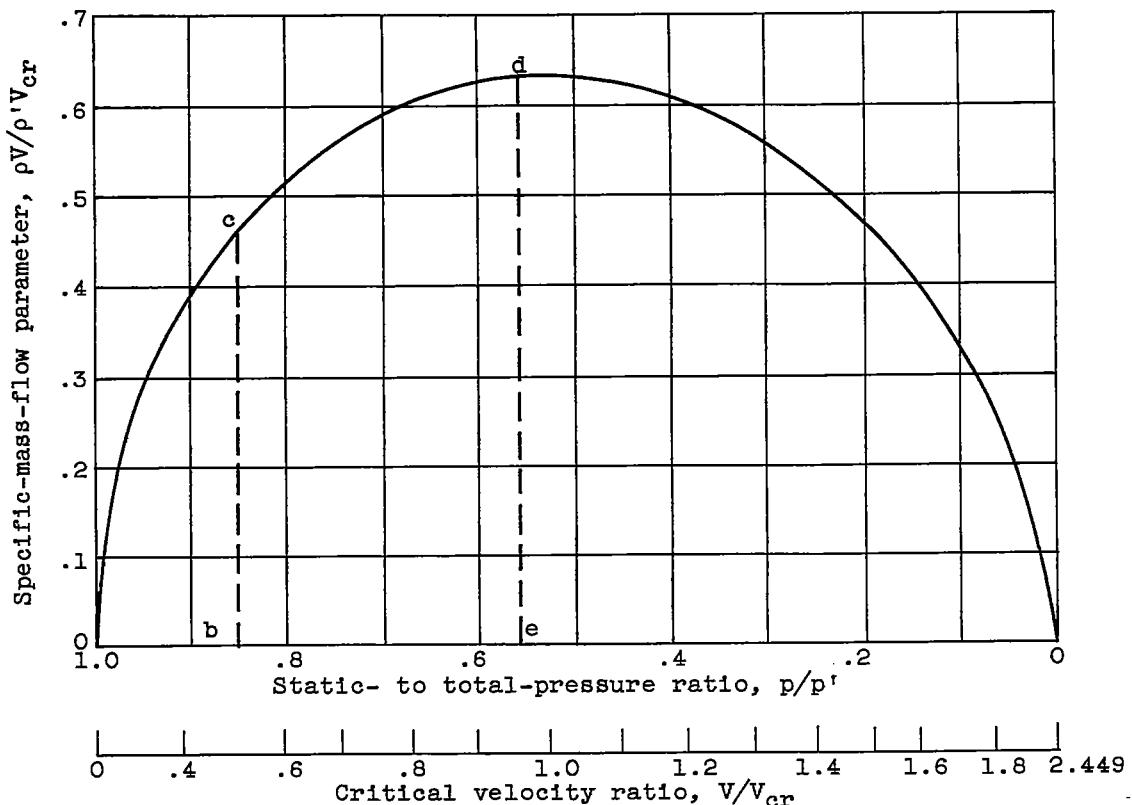


Figure 1. - Variation of specific-mass-flow parameter $\rho V / \rho' V_{cr}$ with ratio of static to total pressure for γ of 1.4, illustrating method of obtaining integrated average mass flow for construction of mass-flow tables.

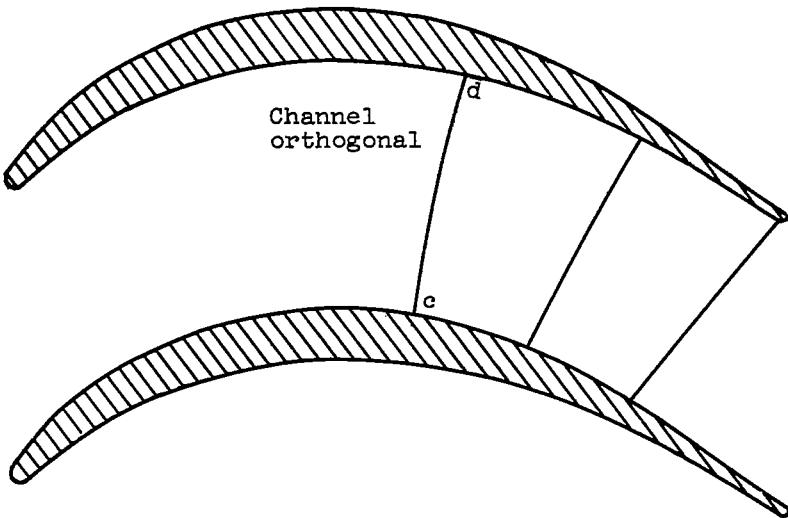


Figure 2. - Sketch of typical turbine blade channel to illustrate use of mass-flow tables.